TRANSIT ISSUE: TIME TO STANDARDIZE?

AUGUST 7, 1967

RAILWAY AGE

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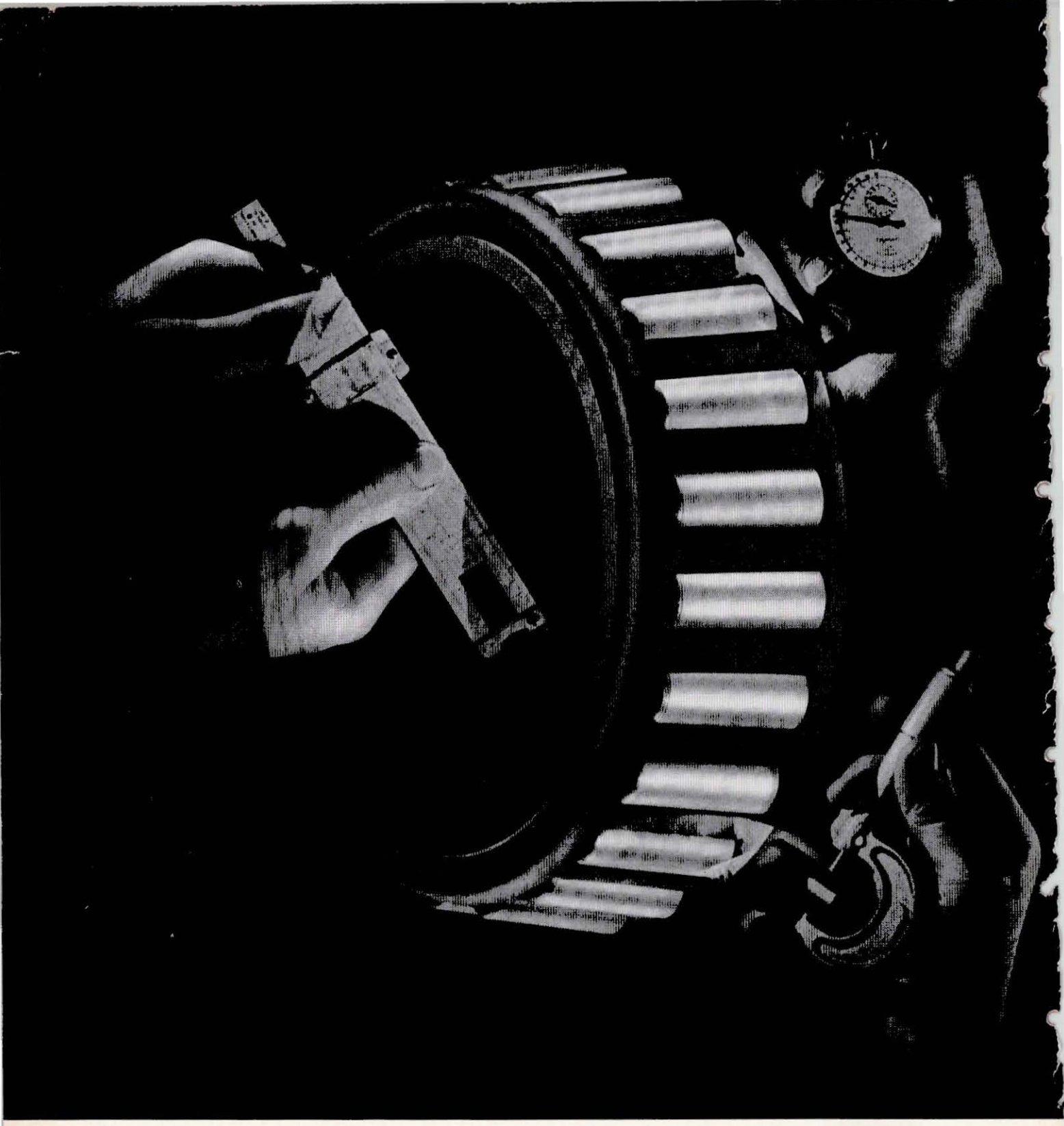
BART looks at automatic fare collection



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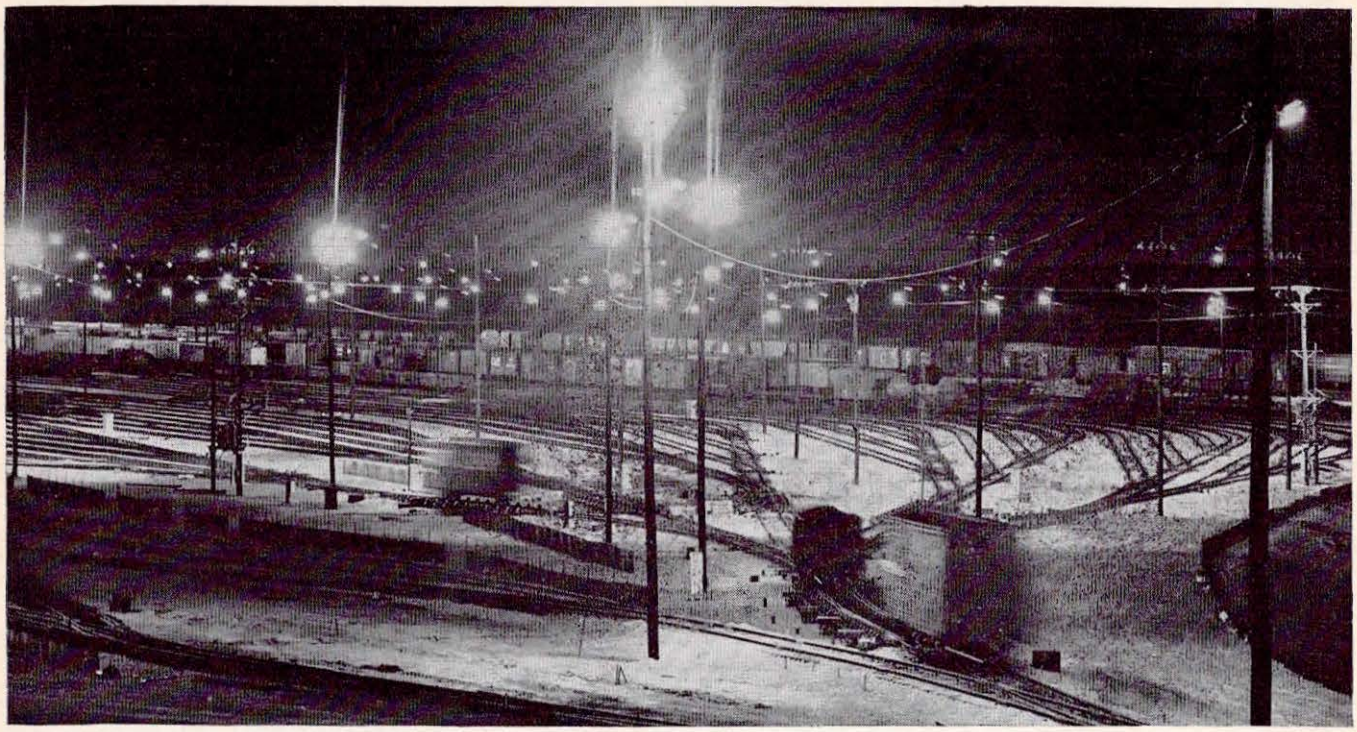

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A new era of high-speed passenger service on American railroads was previewed May 24 when four General Electric powered U.S. Department of Transportation test cars reached a top speed of 156-mph on the Pennsylvania Railroad between New Brunswick and Trenton, New Jersey.

These "rolling laboratories," built by The Budd Company, are part of the Office of High Speed Ground Transportation's program created to investigate vehicle, roadbed and power collection capabilities required for high-speed rail transportation.

The test cars, powered by General Electric traction motors and controls, are forerunners of 50 Pennsylvania Railroad high-speed passenger cars which will inaugurate improved rail service between downtown terminals in Washington and New York this fall. This demonstration program, designed to evaluate public reaction to high-speed rail service, is co-sponsored by the Pennsylvania Railroad and the Department of Transportation.

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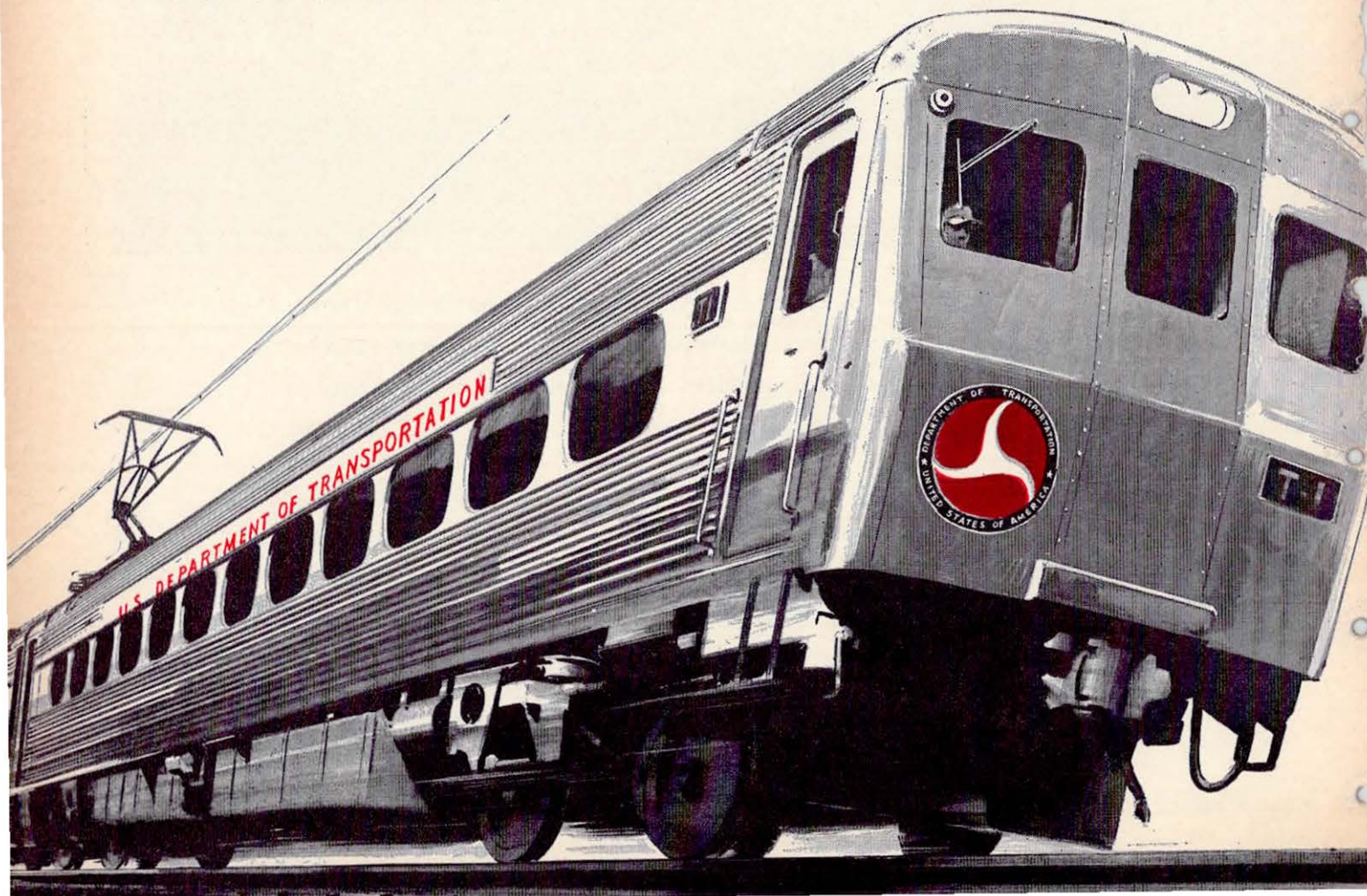

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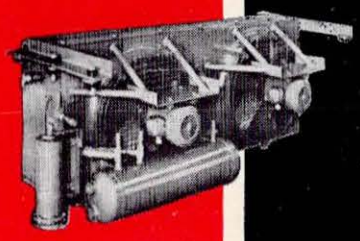

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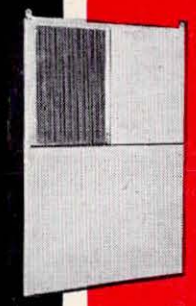

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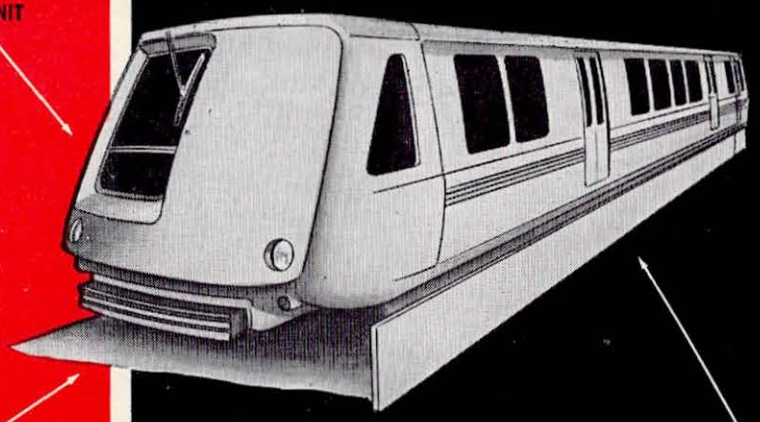

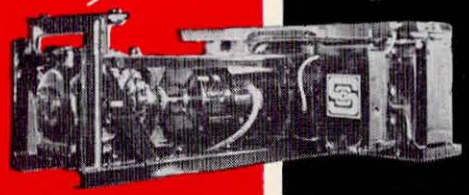

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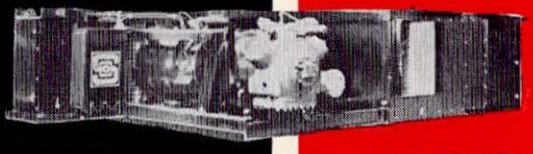

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SHORT AND SIGNIFICANT

Budd bids low on 250 MCTA cars

New York's Metropolitan Commuter Transportation Authority opened bids last week on 250 high-speed commuter cars for the Long Island—and the Budd Co. emerged as the apparent low bidder. The spread between Budd's bid and the Pullman-Standard bid was around $10 million. High bidder was St. Louis Car Division of General Steel Industries. MCTA was clearly delighted with the low bid, which was less than the $55 million the Authority had estimated it would have to pay for the 250 cars. But a spokesman pointed out that while the basic figures had been authenticated, the bids had not been evaluated or weighted. The actual contract probably won't be awarded until mid-September. (For details, see page 33.)

●

Fireman-off, fireman-on: The courts speak again

Both the carriers and the Brotherhood of Locomotive Firemen & Enginemen had new worries last week, in the wake of a U.S. Appeals Court decision—another one—growing out of litigation in the fireman-off dispute. With seeming reluctance, the court ruled that railroads are obliged to use firemen on new runs which may be established. At the same time, the opinion handed a rebuff to the union, in its statement that the carriers don't have to fill any jobs in a case where they were entitled to abolish it under the arbitration award and didn't do so until after the award expired. So far as the new-run ruling was concerned, the court seemed to see no alternative, even though "we realize it may be turning back the clock." The court's action gave rise to immediate speculation about appeals to the U.S. Supreme Court.

●

Civil-rights suit hits Frisco, BRT

Frisco and the Brotherhood of Railroad Trainmen are co-defendants in the industry's first brush with Department of Justice court action relating to the Civil Rights Act of 1964, Title VII. In the suit, filed in the U.S. District Court in Missouri, Justice charges that "Frisco follows a policy and practice of discriminating against Negroes on account of their race by restricting job opportunities available to prospective Negro employees and by maintaining artificial job classifications which cause many Negro employees to receive less compensation than that received by white employees performing similar duties and which impede the Negro employees' opportunity for advancement." The complaint also alleges that the BRT "follows a policy and practice of discriminating against Negroes on account of their race by using its position as collective bargaining representative to perpetuate the artificial job classifications based on race which deprive Negroes of equal employment opportunities." No specific acts are cited, and Frisco indicates that the suit "may involve issues similar to those raised . . . by an individual train porter on behalf of himself and others comprising the craft or class of train porters against the railroad and the union in 1962." That suit, Frisco recalls, "was successfully defended by the railroad and the union."

●

Saunders warns: Merge—or nationalize

Pennsylvania Chairman Stuart T. Saunders thinks it's "highly probable" that the Penn-Central merger will be consummated before the end of '67—and none too soon. Addressing the Commonwealth Club of California at San Francisco, Pennsy's chief expressed dismay over the "foot-dragging and dilatory tactics of some dissident railroads." He warned: 'If these railroads persist in abusing the right and privilege of forming voluntary merger proposals, the movement could collapse and ultimately bring on nationalization."

MONDAY MORNING REPORT

Railroads: Farms' super-distributors?

Giant farms, well-trained managers, and jumbo harvests are breeding superchanges in the concept of farm-product distribution. A portrait of the next decade may show super-elevators rising from the countryside and double-bottom trucks loading up right in the super-fields. No more quiet little farms. No more tractor-pulled wagons. No more trains? Or will the railroads have a major place still in the picture as super-distributors of farm products?

Rails have role as "conveyor-belt"

They should have, say J. V. Springrose, Cargill vice president, and John W. Ingram, Illinois Central assistant vice president, marketing research. The super-elevators and the big trucks are only the beginning of the distribution system, and railroads must act as a conveyor belt to continue the process, Springrose says. "They have functioned well in that manner, as unit trains, in the coal and iron industries. Logistical problems in the grain industry are much more complicated because of the seasonal nature of the harvest, but with a combination of proper elevator design and full utilization of railroad technology, the problems are not insuperable," he says.

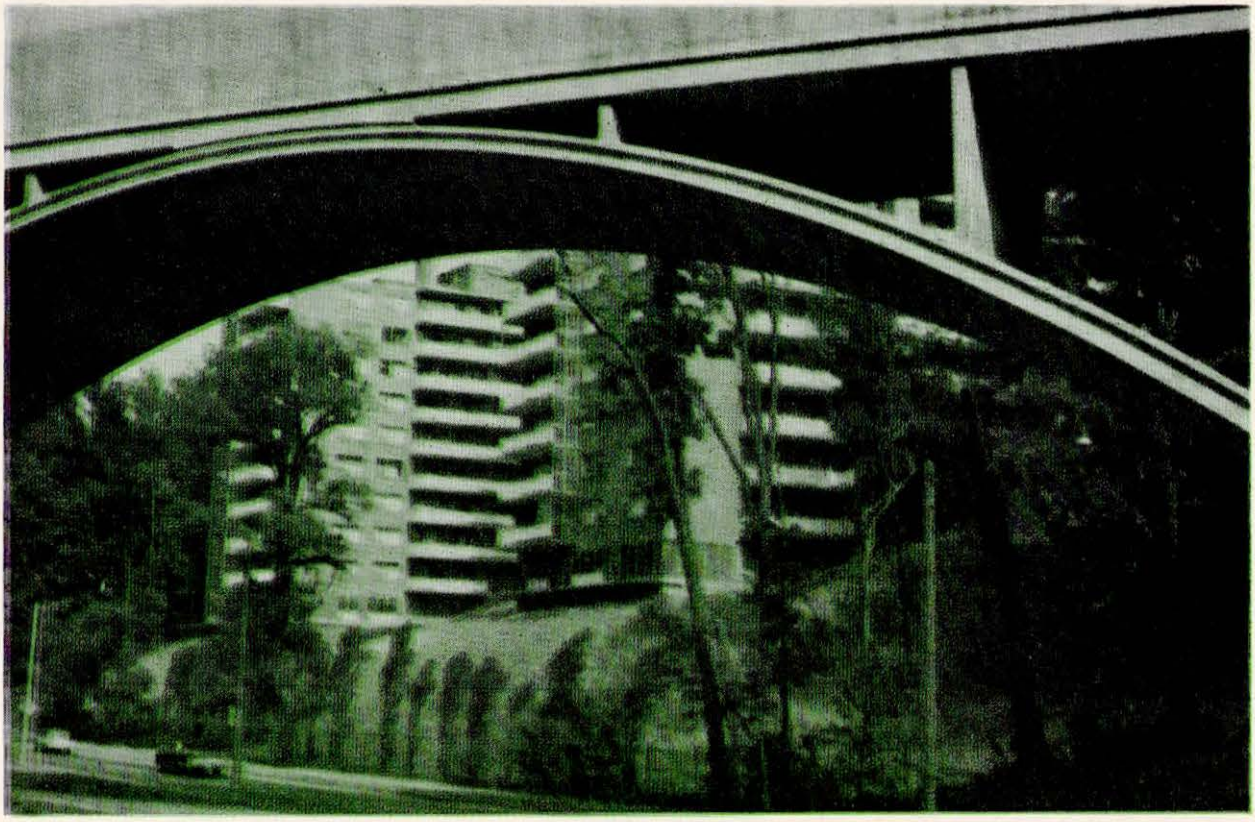
The export market: good starting place

Because most grain is produced inland, Springrose points out, the railroads have an opportunity to play a dynamic role in the new distribution plan which must evolve. They should start "in the export market, for it offers a concentration of large volume directed to a relatively few ports," he says. The technology and the volume already are available to support a profitable year-round distribution system. What's needed now is "the manner of putting them together so that each of the parts, from the producer to the overseas customer, benefits to the maximum," Springrose says. Also needed are some open minds among grain producers. Springrose points out that new rate-making concepts are spreading through the railroad industry but he adds that the grain industry is adapting to them with "a discouraging lot of negativism and delay."

Rent-a-train offered by Illinois Central

So along comes the Illinois Central with a suggested addition to the agricultural mural of the '70s that should open a few minds among both grainmen and railroaders. It's a rent-a-train for grain shippers, and the plan wraps up virtually all the elements posed by Springrose. In the words of John Ingram: "Illinois is the leading producer of export grain. The lion's share of that grain now goes by barge down the Mississippi. Farmers along the river have an advantage over farmers at inland points. Our marketing research has enabled us to develop a plan that will let the inland farmer compete on an equal basis with the river farmer. At the same time we can offer far better service and can handle shipments any time of the year." Under the IC plan, a shipper would pay $1 million annually for year-round use of an 86-car train of 100-ton hoppers plus 1.5 mills per ton-mile, with a minimum charge for hauling the whole train of $5 per mile, loaded or empty. (Or, the annual charge would be $700,000 if shippers' cars were used.) IC would provide added power for up to 29 extra cars at $100,000 more per year. The customer could move his train any time, and as often as desired between points with facilities to handle the train. Savings would vary according to volume and trip-frequency. For example, 516,000 tons to be moved 750 miles (central Illinois-New Orleans) now costs $4 per ton. With the rental-train, the shipper would pay $2.96 per ton if he made 75 trips a year with a total of 645,000 tons.

Rail rapid transit



Unique covered bridge on Toronto Transit enhances appearance and ensures quiet in this attractive residential area.

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WEEK AT A GLANCE

TOFC/COFC: "Get the show on the road....

Knowledgeable men in TOFC/COFC operations have been warning that the day of the automatic-increase in business is at the sunset stage—and that the next sunrise will be a brilliant one only if railroads start moving now to eliminate trouble spots in TOFC/COFC.

Now, from a major shipper comes a series of pointed observations on certain moves which should be made. The list run like this:

—The biggest changes will be required in the equipment area, in rail cars, trailers and terminal facilities, and "we hope these improvements are available to industry in time to precede the big demand, not follow it."

—Every long-distance truck move, over perhaps 200 miles, can be a potential candidate for piggyback, and "this should permit plenty of opportunities for progressive piggyback people to get a shot at their competition's volume."

—So far as the potential in TOFC/COFC revenues is concerned, "the carriers themselves will set their own maximum gross. The dollar income will be limited by those who insist on stunting growth by the familiar but antiquated tariff restrictions and by red tape, with conditions which make it difficult for shippers to divert to piggyback."

—As for the industry's ability to make glowing TOFC/COFC forecasts come true, "the single determining factor will be service. The service question is the question our industrial department asks first—and most. So an eternal vigilance has to be kept to plug the dike as soon as a service leak occurs."

The source of these proposals is big enough to quote and big enough to worry about: It's E. I. Du Pont de Nemours & Co. via Joseph McKeefery, assistant traffic manager with responsibilities in the area of intermodal transportation. Equally important, his observations were made where it counts to TOFC/COFC's front line troops, the members of the National Railroad Piggyback Association.

With piggyback more-or-less becalmed this year (carloadings increases of 4% don't compare well with past performance), NRPA had a special interest in McKeefery's assessment of future competition made up of 45-foot double-bottom trailers, giant trailers, giant air cargo planes, private carriage. NRPA also found intriguing the shipper's view of problem solving and how to go about it: "Usually, the men with the talent to solve the problems do not have the time, and the men with the time do not have the talent. The key is for railroad management to find *the* man and give him both the time and the authority to use the talent. . . . As that piggyback pioneer, P. T. Barnum, said to his circus crew, 'Let's get the show on the road.' "

....and start marketing a real winner."

What's wrong with TOFC/COFC, from the shipper's standpoint? NRPA was handed a few specifics:

—On tariff considerations: "We eye carefully the preferential rate treatment given to your largest competitor, the motor common carrier under Plan 1. We listen to the rumblings of freight forwarders, saying 'me, too.' We live with tariff restrictions made for their benefit. . . . The 60-40 rule is one of the biggest roadblocks. It has to go, someday, if we are to reach full potential."

—In the service area: "Full weekend operations will have to be maintained. It's sheer frustration, trying to find a trailer at a major terminal on a Monday morning."

Over-all, McKeefery thinks the problems are solvable. He's joined by John C. Allen, Jr., manager of operations for ITOPCA, Inc. But Allen also adds the warning that "progressive development of piggyback in general demands a unified approach to the problems. The railroad industry only kids itself when each member of the industry insists on charting its own course."

Allen raises an interesting question, at this point in time: It seems, he says, "that the aggressive interest and enthusiasm displayed by the railroads over the past several years may be waning, in certain cases, and the tide may be turning to an attitude of complacency. Just how interested are the railroads in further promoting the growth potential of piggyback?"

Or to put it another way, as Du Pont's traffic officer does, "The name of the game is 'value' and this is piggyback. We hope to grow along with you. If we can get truck-like service at rail-like cost, we can do business together. When you pass our way, if you're marketing a winner, stop by and let's chat about it."

Railroads win $300-million rate increase

General freight rate increases that will bring in an additional $300 million annually to the railroads were approved by the ICC last week. The roads had sought rate changes that would provide increased revenues of $327.5 million, and an AAR spokesman said that while the industry is encouraged by the Commission's action, "we feel further investigation will show a need for the full amount of the increases sought."

In its interim decision, the Commission agreed that the railroads are urgently in need of more revenue to offset wage hikes amounting to some $246.4 million, and additional payroll taxes of $63.1 million. The present level of rates, said the ICC, "is clearly inadequate to provide the carriers with sufficient revenues, under economical and efficient management, to meet the needs of the commerce of the United States and its national defense." It termed the current situation an "emergency."

The railroads are now free to file a single master tariff embracing the authorized increases, and it must be filed 10 days in advance of the effective date of the changes. The Commission pointed out that its action did not give final approval to the proposed increases, but that they would remain under investigation with hearings set for Oct. 3 in Washington. The master tariff will be subject to protests and possible suspension.

Meanwhile, rate increases for traffic carried within Canada under competitive commodity rates were announced by the Railway Association of Canada. The increases will range from 0.25 cents to 12 cents per 100 pounds.

GUS WELTY'S LINES ON LABOR

WELTY

WHEN THE NEWS CAME, some weeks back, that the National Railway Labor Conference was getting a new chief, the reaction among the brotherhoods was close to being no reaction at all. J. P. Hiltz, Jr., was well known as the president and general manager of Delaware & Hudson, and as a good one. But a labor-relations man, he wasn't. Obviously, the brotherhoods wanted time to mull this one over. By all indications, they're still mulling—but there has been one rather lengthy union position-paper on Hiltz which may or may not give a clue to brotherhood opinion. It comes from an organization which has had the most bitter battles with the carriers in recent years, and from an individual who does know the new NRLC chairman. It's a mixture of militancy and moderation.

THE ASSESSMENT comes from the Brotherhood of Locomotive Firemen & Enginemen, via the New York State Legislative and Education Board and its chairman, Francis B. Boardman. The story goes under the lead line "Hail to Hiltz" —and what follows is half hail and half hell, or maybe more of the latter than of the former.

TO TAKE LAST THINGS FIRST, the BLF&E paper recalls a debate that took place four years ago, in the midst of the work-rules controversy. Says Boardman: "It was very evident at that time, and I have no reason to believe he has changed his position, that Hiltz had strong anti-railroad-labor points of view."

GETTING AROUND to the "hail" part of the discussion, there is this comment: "There is no arguing the fact that Jack Hiltz has been a tough, yet very fair and honest taskmaster. His operation of the D&H has been a model of efficiency and at the same time profitable. Despite [J. E.] Wolfe's retention as a consultant, it's our guess that Hiltz will be his own boss. His new position will enable him to reverse, or eliminate altogether, the trend of bitterness that has crept between labor and management, or he could torpedo what little accord exists at present. He could become the 'statesman' that the field of labor-management has needed for so many years. The choice will be strictly up to Jack Hiltz—we wish him well."

FROM THIS CORNER would have to come a reminder that the choice is not "strictly up to" Mr. Hiltz. The choice rests, as it always has, with both sides. Railway Age editors who know Mr. Hiltz would back the BLF&E completely, on its assessment that this is a tough, fair and honest man, and a most worthy successor to Doc Wolfe. We'd also call him a statesman—and hope that the union definition of a statesman doesn't always take this course: "Statesman — one who agrees with me."

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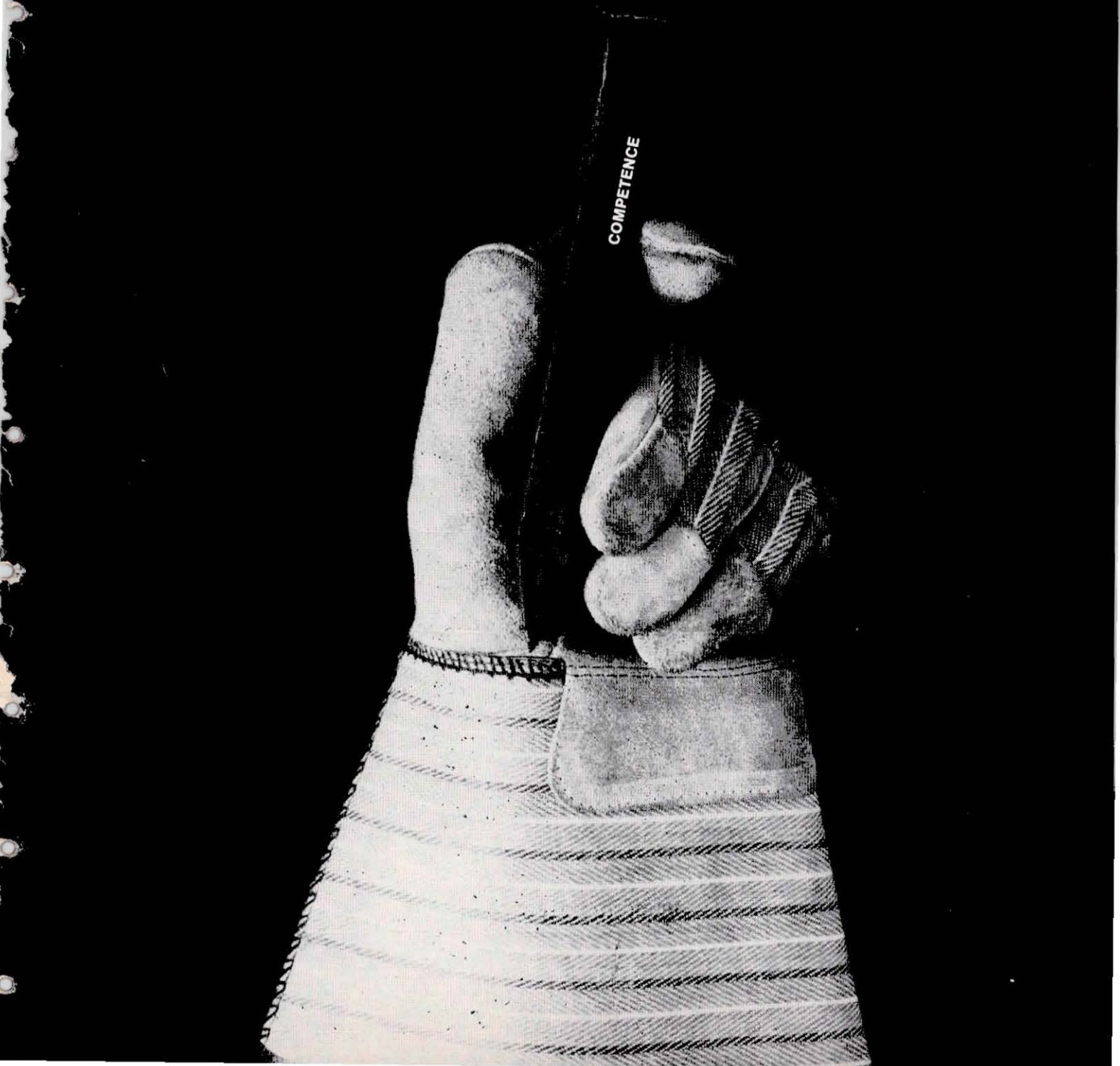
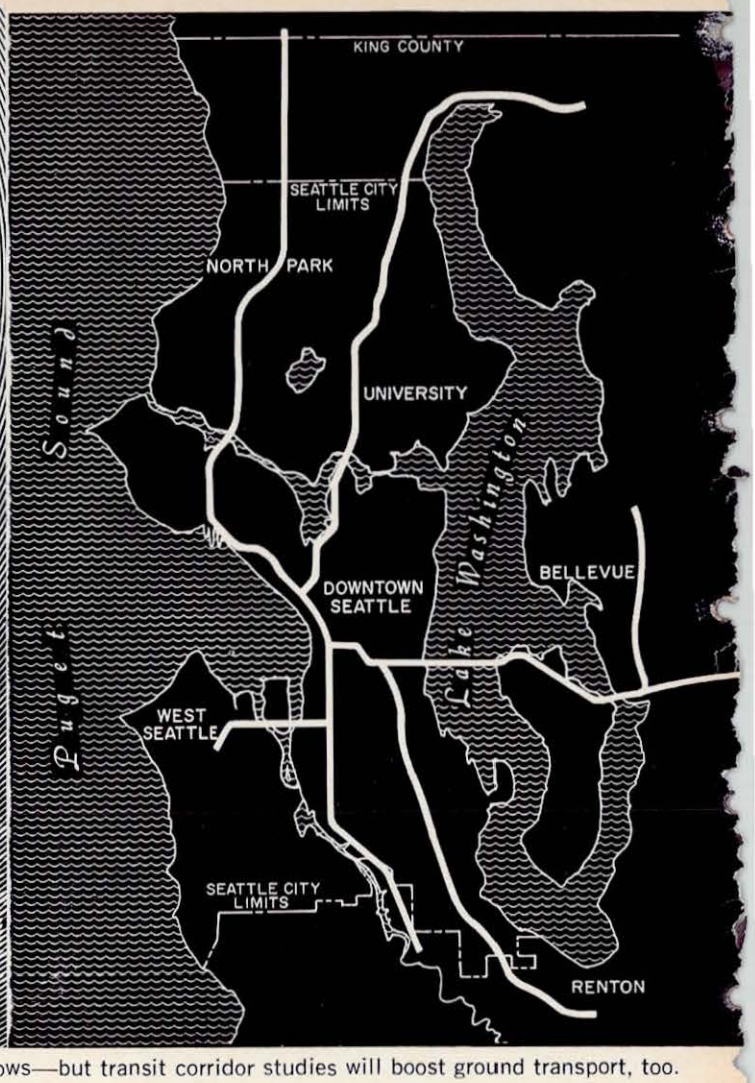




PREEMINENCE IN SPACE is Seattle's boast, as "The Needle" shows—but transit corridor studies will boost ground transport, too.

Seattle raises its transit sights

The original proposal was for a 20-mile rapid transit system. But plans now being drawn up may double or triple the size.

They think big in the Pacific Northwest—in transit no less than in other fields. A year and a half ago, Seattle officials unveiled a plan for a $171 million 20-mile rapid transit system. But it looks now as though the system will be much bigger than that.

At the beginning of 1966, the Puget Sound Government Conference released an interim engineering feasibility report from De Leuw, Cather & Co., recommending construction of a rapid transit system for Seattle (RA, Feb. 7, 1966, p. 14). Since then, both local officials and the engineering consultants have looked deeply into the matter. What they think now is that Seattle will need more—much more—rapid transit than was in the original plan.

The chief reason is the area's phenomenal growth rate, which shows no signs of letup: The economic analyst of the Seattle-First National Bank forecasts a growth rate in excess of 50% for the region over the next 20 years. Commerce and industry are raising their sights—and transit planners are following suit.

"It could be a $500 million system, a $1 billion system, or something in between—we don't know yet," said Israel Gilboa, De Leuw's assistant vice president and project manager in Seattle. Sources at City Hall settle on $750 million as a round, provisional figure.

• **Decision in 1968?** What is known is that city officials will be getting a final report from the transit consultants by October, setting forth just what it ought to be.

All indications are that both consultants and city fathers are thinking in terms of a transit network on the order of 50 or 60 miles in length.

If civic officials approve it, the plan will be put to the voters in the form of a referendum on a bond issue in January or February, 1968.

Said Gilboa: "If the voters approve, it may be possible to have the downtown leg of the system in operation by 1972 or 1973." The first phase of transit construction could be finished by 1975, and further phases by 1985.

As one official close to the Mayor put it: "When the plan was first developed, we didn't altogether know what we were getting into. Since then, we've

had a lot of catching up to do, both in our reading and in first-hand knowledge of what goes into a transit system."

"We are definitely shooting for something bigger than we were at first," he continued. "We intend to put the emphasis on quality—both in performance and standard of service to the rider."

● **New dimensions.** The result is that the consultants were sent back to their drawing boards and computers, in order to determine what the real size of the ball park will be.

In the interim report of last year, the plan called for expenditure of $111 million to build a 10-mile line through the downtown area, and extending out through the northwest portion of the city. In the next phase, an additional $60 million was to be spent to continue the line the other way, from downtown east across Lake Washington to Bellevue, for an additional 10 miles.

Gilboa noted that the former corridor was identified at an early stage as a heavily traveled one with obvious transit potential; the latter is one tapping an area growing especially quickly.

But, he went on, "As we got further into it, we studied the figures and realized that rapid transit had potential in some of the other main corridors as well.

"You have to understand that this is a dynamic area. Industry has been moving in, and the population and of course traffic have been going up at tremendous rates. The growth estimates of five years ago, optimistic as they were, are turning out to be too low." The planners have had to revise their projections upward, and the transit engineers are doing the same.

● **Likely routes.** How is the plan shaping up? Nothing is fixed as yet, but the indications are that the northwest extension from downtown, which figured in the earlier plan as a top-priority item, retains this priority. It is now in the preliminary design stage.

The eastern leg across Lake Washington may change its route alignment somewhat—it's possible that an extension still further east may come.

In either case, the route across the Lake will probably make use of a joint-facility bridge, shared with an expressway.

The northeast leg to the University of Washington area and beyond is being intensively considered; so are possible routes to the south, where Boeing has extensive facilities at two locations.

The other corridor identified as a potential transit corridor is the one to west Seattle; here it's thought that an express bus service might do the job.

City officials caution that the fact that the northwest leg is getting priority in design work does not mean that it is the only line likely to be worked on in the first phase; it's possible that digging could be done on other lines, too, in that phase.

● **Hardware.** Says Gilboa: "We are not ready yet to make decisions on hardware types, but you can be sure we are thinking of such things as air-conditioned vehicles, automatic train control and automatic fare collection."

"We are also thinking," he said, "along the lines of having eight-car trains operating at four-minute headways during peak periods."

● **How the idea grew.** The idea of rapid transit for Seattle is not new. The first proposal for a system goes back to 1909, and the suggestion was revived about once a decade thereafter.

Nothing much ever came of these schemes until 1963, when the City Planning Commission issued a technical report on the central business district. The report stressed that some form of transit is essential if the city is to maintain its vigorous growth, and recommended reserving rights of way in important corridors to and from the central business district for transit.

A year after that report, the Puget Sound Governmental Conference, a regional political grouping, commissioned the first De Leuw, Cather study. The results of that study were widely endorsed locally, both by city officials and by a cross-section of business and civic groups.

The chief spur to further action is generally acknowledged to be Mayor J. D. Braman, who, like Mayor Jean Drapeau of Montreal, has made transit a personal cause.

He made repeated trips to Washington, D.C. to stress the national stake in the big cities, and to press for federal action. After he and other city officials endorsed the findings of the former feasibility plan, they applied for and got a $125,000 planning loan from HUD for design of the first leg of the system. They then applied for and received a HUD grant of $666,000 for further engineering studies, the largest grant of its kind made by HUD.

METRO—The Municipality of Metropolitan Seattle—got enabling legislation from the state capital this year to direct a $400,000 study for a comprehensive area-wide transit plan. Of this sum, the state raised $250,000 and HUD is expected to contribute $150,000.

The comprehensive planning study is to go intensively into many additional aspects, such as motivation and market research, visual design and urban environment aspects, and bus feeder links with rail transit service.

A Seattle city official sums it up: "We are not out just to build a couple of transit lines; we see transit as a tool to shape the growth of the city along the lines we think it should take —orderly lines."

By October, it should be clear just what those lines will be. ■

TRANSIT BY 1975

"Rapid transit may not, to the outsider, seem as important to a city of Seattle's size as to some of the larger cities of the nation which do not yet have such mass transport facilities. The unique topography of Seattle and its immediate area, however, greatly exaggerates the transportation problem during peak hours. This makes mass transportation facilities essential.

We are convinced that only a modern public transportation system which includes all available modes will do this needed job. In fact, we hope to construct some of our rail transit in the median strips of our new freeways.

We also hope to use transit to help mold the growth of our city so that we get the most desirable pattern of growth and redevelopment. We believe we have insured the accomplishment of this approach through the retention of a design team composed of engineers, architects and urban designers—all of whom play a role in recommending routes, stations and design criteria for the system.

We are not unaware of the many difficulties we face. It appears though that if we continue to make the progress we have been making, we can meet the 1975 date set for the operation of rapid transit here in Seattle."

—Hon. J. D. Braman
Mayor of Seattle

TRANSIT POLL

Time to standardize on transit

YES

1. **Lower unit costs.**
2. **Quicker deliveries.**
3. **Greater supplier stability.**

NO

1. **Varying operating characteristics.**
2. **Fear of a technological freeze.**
3. **Differences in rider demands.**

By JOE ASHER

What topic raises more hackles than any other in the transit industry? A good candidate might be equipment standardization, a Railway Age poll reveals.

The views of transit operators, suppliers and consultants were sought. The main finding is that nearly everyone thinks more standardization—particularly of rolling stock and vehicle components—is a fine thing in principle. But opinions vary widely—and sometimes hotly—on what ought to be done.

● **High cost of being different.** Each transit system has different clearances, different performance standards, and writes different specifications into new car orders.

Carbuilders feel strongly about this because orders are few and far between, and when they do come in, the supplier typically has to tool up to turn out the product on a one-shot basis. Long production runs are out of the question, unit costs are driven up, and delivery times are lengthened.

Says E. B. Meissner, Jr., president of St. Louis Car Division, General Steel Industries:

"There is a complete lack of uniformity in today's car orders among the different transit operators. Everybody is creating something new—new designs, new specs, new configurations. As a result, each car order these days is really a new creation."

James A. Miller, vice president and manager of Budd's Railway Division, agrees: "Manufacturers find themselves not mass-producing but in a job-lot business. Our technical progress is being adversely affected by the need to fill so many varying kinds of orders." According to William Van der Sluys, general manager, passenger-car engineering, Pullman-Standard, "It would be wonderful if there were more standardization of vehicles, but the whole trend nowadays is the other way, and it's making transit cars extraordinarily expensive to build. There isn't even a basic body structure that can be repeated; each new car order has to be redesigned from scratch."

● **The carbuilders' stake.** Budd's Miller emphasizes how serious this state of affairs is for builders:

"Several carbuilders have gone out of business since World War II. A way has to be found to guarantee the carbuilders some kind of market, or I predict within five years there won't be three carbuilders."

As Miller sees it: "What we need in the industry first of all is for car buyers to look objectively at products in house and in design, and select what meets their needs. Our prime need is to standardize on some car types, and have the time to develop the product and reduce costs. If that were done, perhaps 20% could be cut from the car cost."

There are operators who agree, and agree strongly, that more standardization must come.

George DeMent, president of the Institute for Rapid Transit and Chairman of the Chicago Transit Authority holds this view:

"More standardization is not only desirable but from an economic standpoint a necessity. I think we ought to do everything possible to bring about more of it.

"Now, that sounds very easy," DeMent continues, "but of course there are difficulties. Each property has its own characteristics and problems. One of these difficulties is that there are so many new developments coming along these days: Some operators are going all the way with them, some go just part of the way—and that is not the way to get greater uniformity. But there is no question that standardization must get greater emphasis.

"Some of us have done work on our own individual properties to try and advance this. I have pressed for action at the American Transit Association, and the Institute for Rapid Transit is now closely examining the national test track idea."

E. C. Krueger, general manager, Cleveland Transit System, thinks standardization "is long overdue, and there are plenty of components in cars that could be more standardized."

"Everyone hires a consultant, and then they go out and decide to build a monument to themselves—'This is my creation'. The fixtures, jigs, tools and dies for the particular car are all different, and no use to anyone afterward."

E. L. Tennyson, Philadelphia's City Transit Engineer and Deputy Commissioner of Public Property, feels that "there is plenty of room for more standardization — within dimensional flexibility and type of service. There are two main types of service that would have to be accommodated—the short-length and the longer-length, such

hardware?

as the Delaware River Port Authority line and the Boston South Shore line, with their higher speeds and greater station intervals."

● **Where there's a will . . .** "Some properties would require higher horsepower for their vehicles than others, but certainly much greater standardization can come: Motors, door engines, seats and air conditioning for example, could all be pretty well standardized," adds Tennyson.

Jack Hoban, general superintendent, railroad operations, Port Authority Trans-Hudson Corp. (PATH), puts it another way: "There is a need for more standardization and systems engineering. We have to get away from all this custom-building, where everybody has equipment components that don't interface with anybody else's."

The problem, nevertheless, has many dimensions, as Rush Lincoln, Jr., general manager of the Massachusetts Bay Transportation Authority brings out:

"There isn't anybody who would dispute that more standardization is desirable, but there are so many variables to be considered—not only the fact that clearances are different and therefore the vehicle 'envelope' has to be different, but differences among various systems in grades and power requirements. Even climate has an effect on performance characteristics.

"Complete standardization," he goes on, "is not likely, but maybe some greater degree of it is possible. This will be awfully difficult, but we ought to explore how it might be supported. Here, for instance, we are hoping for some alternate proposals right now that will meet our performance requirements and also set a higher standard."

● **Flux in state of the art.** John G. Inglis, general manager of operations, Toronto Transit Commission, feels that "standardization and cost reduction generally go hand in hand. However, it is difficult at the present time to obtain a high degree of standardization because of the rapidly changing state of the art.

"It is doubtful," he goes on, "if there has ever been a period in rapid transit history when so much attention has been given to finding better ways to improve our product. . . . Accordingly, standardization cannot be maintained at a high level at a time when many new devices and techniques are becoming available."

According to Robert Johnston, chief transit engineer, Delaware River Port Authority, "Many components in vehicles could effectively be standardized, and to some extent we have adopted a number of components that are standardized.

"But there's more to it than that," he goes on. "Here on the south Jersey project we've got the job of luring people out of their automobiles onto our system. We've got to meet competition in speed, convenience and comfort.

"We've prescribed a performance level for our new cars of a scheduled speed of just a shade under 40 mph. We've prescribed seats in those cars with a certain degree of bucketing. Some other systems don't have these standards. So I say, standardization is fine, but it has to come on a high enough level to make us truly competitive."

Jackson Graham, general manager of the Washington Metropolitan Area Transit Authority, holds a similar position:

"It would certainly be worthwhile to see what general standards of performance and service could be set. But there are all the new improvements coming along—new suspension systems, new materials in cars, and so forth. We would not want to be locked in.

"There would have to be cognizance taken of all the variables. BART, for instance is offering a seat for every passenger; others are not. There are many other variables."

● **The BART view.** Since BART is so often cited as pacesetter for the industry, what indeed, about BART?

Says David Hammond, director of development and operations, Bay Area Rapid Transit District: "I am for greater standardization just as I am for brotherhood—it's a general goal. From our standpoint, though, it's extremely difficult to see how it can be attained, at least in the short range, while we are occupied with trying to raise the general standard of performance and service.

"In the long range, however, I think there is definitely a chance for greater standardization, as higher standards do prevail. As an example, I would cite automatic train control. Everybody knows that we accepted a particular bid from a particular firm, but the fact remains that we set a *performance* specification for all bidders to meet."

Other manufacturers in the transit field have their own perspectives. Standardization of transit systems, related vehicles and propulsion and automation equipment "represent a fleeting objective at best," according to Norman W. Seip, manager, General Electric's transportation equipment projects and marketing operation.

"Cities have different characteristics and service requirements," he says. "We have a dynamic technological situation and yet there is need to maintain a healthy balance between standardization and change, in the interest of reliability, safety and economy."

● **Systems approach.** W. Perry Bollinger, general manager of the transportation division, Westinghouse Electric, sees it this way: "What might be useful is for the user industry to block out certain areas for which we could have systems.

"For example, instead of an operator specifying new cars that reach a maximum speed of 95 mph, he could agree with other operators that the requirements be either 85 or 110 mph. Either he would settle for a little less than his desired performance or in the other case be slightly overpowering the cars. However, in either case, he would obtain an economic advantage, because the manufacturer could build the standardized equipment in larger quantities."

J. K. Records, president, General Railway Signal, thinks standardization is too often called an innovation-stifler: "I believe we should incorporate standardization in overall design, with sufficient leeway in development of specific hardware for progressive innovation."

Transit consultants concede the desirability of standardization as a principle, but cite obstacles in the way.

According to Walter Douglas, senior partner, Parsons Brinckerhoff-Quade & Douglas, "There is no doubt that there are great advantages to be gained if a consensus is achieved. But you have to realize that the transit industry is in a process of reinvigoration, seeking improvements, raising standards of performance and quality. So I think standardization is much to be desired, but it won't be easy and is not imminent."

John Curtin, of Simpson & Curtin, puts it this way: "If you can't standardize the geometry, you can't standardize much of anything else. In any case, you don't want to standardize on a sub-standard performance." And from

Victor C. Cole, vice president, Kaiser Engineers: "It might be possible in some areas, but the differing nature and type of service on each system makes it very difficult."

I. F. Mendenhall, president, Daniel, Mann, Johnson & Mendenhall, believes that "Standardization is inevitable, but it will be a while before it can be achieved."

He notes the new systems now being planned or built, and sees "quite a diversity of thinking as to what is right."

• **How about a test track?** What about the proposal made by Department of Housing and Urban Development officials for a national transit test track? The reaction almost universally from operators, suppliers and consultants polled is—"Great—if it can be financed."

Aside from three dissenters, all respondents to the poll thought the test-track idea a fine one, with real potential in the field of standardization no less than in other areas.

CTA's DeMent says: "IRT is very interested in the idea. What shape it might take we don't know yet. Whether it should be a central agency, whether at a specific location or spread out in New York, Boston, Chicago and so on —this is what we are examining right now. Several properties have unused or little-used lines that might be good for test work."

BART's Hammond praises the proposal, saying, "We like to think we had something to do with the idea because of our own BART test track."

MBTA's Lincoln thinks it would have promotional value no less than engineering value: "Equipment developed at such a test track would receive national recognition: Although still subject to local preferences, it would be much easier to sell locally."

There were three dissenters from this general view—one of them going so far as to call the national test track idea "sterile."

One is the president of a major consulting firm, who says: "I am somewhat skeptical as to the advantages of a national test track. However, there is certainly need for research and development on railroad tracks which serve commuter and inter-city traffic."

The other two are Philadelphia's Tennyson and DRPA's Johnston, who think a test track with no people riding on it is not nearly as good as testing on "live" systems. As Johnston puts it: "Spend money where the people are."

WMATA's Graham takes a middle approach: "Some kinds of testing lend themselves to a laboratory atmosphere, others are best left on an operating property. But the test track is a good idea." ■

STREAMLINED FOR SPEED: Exteriors resemble other stainless designs, but to reduce aerodynamic drag, sides and front are more rounded.

Budd finishes first of high-speed cars

Coming off the assembly lines are 50 stainless steel cars for the Northeast Corridor project starting in October on PRR.

High rail speeds and full passenger loads do not come at low cost in the competitive passenger transport market which constitutes the U.S. Northeast Corridor. The $400,000-plus price tag on each multiple-unit electric passenger car for the Pennsylvania's segment of this operation serves to emphasize the investment which is necessary. The first of 50 cars which will cost a total of $21.6 million have begun to roll off Budd production lines in Philadelphia (RA, July 24, p. 34).

All 20 coaches and 20 snack coaches in the order are to be completed in time for the PRR to make major revisions in its New York-Washington service coincident with its timetable change next Oct. 29. Ten parlor cars will be introduced on the runs soon thereafter.

As part of the federally-aided program to see just what it takes to get people out of their automobiles and off air shuttle planes, the PRR will add about 30 new trains to its New York-Philadelphia-Washington service. These added runs will represent a service increase of about 50%.

Between New York and Washington, nine trains each way will aim at three-hour schedules—a cut of 35 minutes under the present fastest rail time between the two cities. Introduction of the new trains will also mark resumption of the hourly service which so long characterized the route.

• **Tremendous determination.** Dr. Robert A. Nelson, director of the Office of High Speed Ground Transportation of the U.S. Department of Transportation, believes the new equipment ex-

STREAMLINED FOR COMFORT: Air-conditioning, indirect lighting, individual reading lamps contribute to modern decor.

hibits the "tremendous determination" on the part of the PRR, Budd and component manufacturers to show just what the latest in rail technology can accomplish. The Government's role, via its $90-million commitment in the High Speed Ground Transportation R&D Act of 1965, cannot be discounted. More than $11 million in federal funds is being spent on the New York-Washington phase of the project, including $1.5 million for the 21-mile test track between New Brunswick and Trenton, N.J. (RA, June 12, p. 15). More than $44 million is being expended by the Pennsy on roadway rehabilitation, including the installation of hundreds of miles of welded rail.

The new trains will be operated for a two-year period while PRR and OHSGT measure their effect on patronage and conduct experiments in fares, food service and operations to determine passenger appeal. Dr. Nelson reports that OHSGT has already developed considerable information on present riding patterns. With improved service, it is hoped that the downward trend can be arrested and passenger traffic at least stabilized.

● **Even loss may be a gain.** While profits are paramount in the private enterprise sector of the economy, the government, according to Dr. Nelson, may consider it worthwhile to gain data which would show where future investment in transportation facilities should be made. "The rate of return which the PRR expects," he explains, "may be substantially different than that of the cost-benefit ratio as calculated by the U.S. Government." Even if the Northeast Corridor demonstration were not an overwhelming success on a balance sheet, it might still prove that railroads are the best "buy" for federal funds expended on transportation in this crowded region.

Even with the best in trains, tracks and timing, the projected service could fail if those responsible for the operation lacked spirit and enthusiasm. J. B. Dorrance, Jr., PRR's Corridor project director, acknowledges this fact and explains that 4,000 PRR employees involved in every facet of the operation will have special training prior to the beginning of the new runs. The U.S. Department of Labor is assisting the PRR in this training program.

● **Passenger is paramount.** In designing the new cars, the basic consideration was the passenger, according to James A. Miller, vice president and general manager of Budd's Railway Division. To deliver the rider to his destination rapidly, each car will have four 640-hp motors that will permit acceleration to 125 mph in 2 minutes. All cars will be geared for a top speed of 160 mph. In the initial phases of the demonstration, trains will not operate faster than 110 mph. Typical of the scheduling will be the 69-mile run between Wilmington, Del., and Baltimore, Md., that is to be covered in 43 minutes —an average of 96 mph. Dynamic braking, used normally for service stops, will slow the train to 30 mph when blending with air brakes will occur to bring it to a complete stop. Composition-shoe tread brakes are used.

Carbody configuration for all cars will be the same—a basic 85-foot stainless-steel structure. The cars are designed to be operated in coupled pairs, each having a single operator's cab at the outboard streamlined end. Sides are curved to maximize width at the shoulder height for seated passengers. Streamlining is in accordance with scale model wind tests and computer analysis.

The operator's cab, which incorporates special surveillance equipment, is at one side of the vestibule passageway; an equipment locker is on the opposite side. The streamlined profile of the fronts of these two areas is continued across the clamshell doors which move forward and then part as they move transversely to uncover a retracted diaphragm when the car is to be at an intermediate position in a train. All cars are fitted at both ends with Symington Wayne hook-type couplers which make mechanical, air and electrical connections automatically.

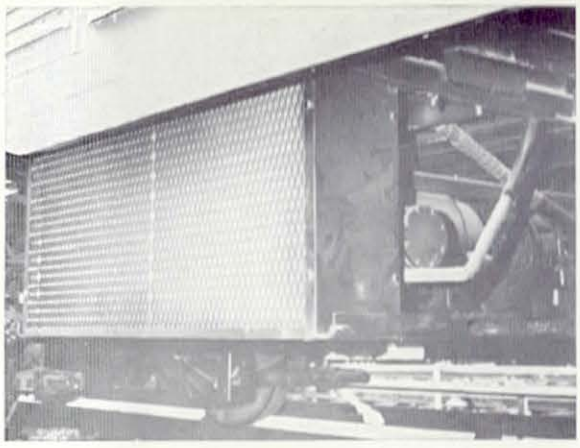
Trucks are a General Steel design incorporating air and coil springs. Acoustical insulation has been emphasized throughout the car to make them as quiet as possible. Carpeting has been extensively used from ceiling to floor in passenger sections for sound deadening and ease of maintenance. Other linings are plastic-faced materials.

The 76-passenger coach weighs about 165,000 pounds; the 60-passenger snack-coach weighs 168,000 pounds. Each parlor car will seat 34 persons and will weigh about 169,500 pounds. Passengers will be served at their parlor car seats from an aircraft-type galley. Coach passengers will either be in or adjacent to a car with a snack bar.

Indirect lighting over the deep luggage racks will be supplemented by individual reading lamps at seats. Heating will be all electric; each car will have a 12-ton air conditioning system with dual cooling units feeding the overhead duct installation. There will be individual exhausts at each seat.

Glass area in passenger windows has been substantially reduced from the accepted standard and all glass is tempered safety plate.

While each car will have vestibules at both ends, only those at the nonstreamlined ends will have steps and traps. PRR is constructing high-level platforms at its Washington, Baltimore and Wilmington stations to permit the Corridor trains to make stops of minimum duration. All doors are of the sliding type controlled from a central location in the rapid transit manner. ■



COMPRESSOR-CONDENSER unit is fitted to the underbody of the car near trucks. If tests are successful, the practice will be extended to more of the car fleet.

WHERE ARE THE FANS?—New Yorkers may ask. Continuous diffusers on car ceilings produce uniform air distribution, without icy spots to disturb riders.

Keep your cool in New York subways

NYCTA bought 10 air-conditioned cars; more may follow.

Into a long, hot summer on the New York City subways a little cool has come—ten cars of it. This week the New York City Transit Authority begins operating a complete IND line train of fully air-conditioned cars which could mark the beginning of a dramatic change in the character of summer subway riding on the huge system.

• **Cool new era.** "If test runs prove successful," says New York's Mayor John V. Lindsay, "the city will put a top priority on orders for several hundred more cars so that air-conditioned trains will be moving on nearly all subway lines in the next few years."

NYCTA has tried before. Between 1955 and 1962 there were attempts to cool a New York car with a series of separate units—initially four 1½-ton models and subsequently six of 2-ton size (one ton of air-conditioning capacity indicates removal of 12,000 British thermal units per hour). NYCTA concluded that with such installations it could not overcome the effects of peak-load crowds of 200 passengers per car, combined with high humidity and the frequent opening of doors in tunnels filled with warm air.

• **Greater cooling capacity.** The cars now going into service have nearly twice as much cooling capacity as their unsuccessful predecessors. The new installation has the capability for circulating and cooling all the air in the car in less than one minute. "But this is admittedly experimental; we are not absolutely certain of the outcome," comments an engineer of GSI-St. Louis Car, which built the 200 cars that included the ten which have been air-conditioned. He did explain that there is sufficient cooling in each car to take care of six average six-room houses.

Five cars are fitted with Safety Carrier installations which are rated at 18 tons; five have Trane systems which rate at 20 tons. Installations are essentially the same. A single compressor-condenser powered from the 600-volt third rail is installed under the car. A pair of evaporator-blower units are installed above the ceiling, one at each end of the carbody.

The familiar ceiling fans have disappeared, replaced with a smooth ceiling having slot-type air diffusers along the sides. Air is circulated through the insulated, split duct above this ceiling at a rate of over 5,000 cubic feet per minute.

• **Will it lure riders?** If the experience of two other U.S. transit operators is a precedent, NYCTA riders will find air-conditioned equipment attractive. All 253 cars in the New York—New Jersey service of Port Authority Trans-Hudson are air-conditioned. These include 206 built by GSI-St. Louis Car over the past three years (RA, Mar. 15, 1965, p. 26) and the remainder built by St. Louis in 1958 (RA, July 14, 1958, p. 12) for Hudson & Manhattan and the Pennsylvania which then operated the New York — Newark, N.J., service now run by PATH. Chicago Transit Authority operates 180 air-conditioned cars built by Pullman-Standard (RA, May 4, 1964, p. 26) in 1964.

For the transit operator, air-conditioning does not come free. William H. Miller, PATH's superintendent of equipment, reports that there is a 12-man staff for cleaning, testing and repairing the heating, cooling and ventilating equipment on 253 cars—about one man-day per car per month. Miller emphasizes the importance of cleaning.

The under-car condenser must be blown clean with compressed air monthly. The twin evaporators in the car's ceiling are cleaned with a vacuum every thirty days, when the filters in the fresh-air and return-air ducts are either cleaned or replaced. The 1965 cars have permanent type filters which must be washed and oiled after each change. The 1967 cars have disposable filters which PATH is now appraising carefully.

There have been equipment refinements which have been found necessary as PATH experience increased. Most problems have been resolved successfully, says Miller. ■

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● **Passenger is paramount.** In designing the new cars, the basic consideration was the passenger, according to James A. Miller, vice president and general manager of Budd's Railway Division. To deliver the rider to his destination rapidly, each car will have four 640-hp motors that will permit acceleration to 125 mph in 2 minutes. All cars will be geared for a top speed of 160 mph. In the initial phases of the demonstration, trains will not operate faster than 110 mph. Typical of the scheduling will be the 69-mile run between Wilmington, Del., and Baltimore, Md., that is to be covered in 43 minutes —an average of 96 mph. Dynamic braking, used normally for service stops, will slow the train to 30 mph when blending with air brakes will occur to bring it to a complete stop. Composition-shoe tread brakes are used.

Carbody configuration for all cars will be the same—a basic 85-foot stainless-steel structure. The cars are designed to be operated in coupled pairs, each having a single operator's cab at the outboard streamlined end. Sides are curved to maximize width at the shoulder height for seated passengers. Streamlining is in accordance with scale model wind tests and computer analysis.

The operator's cab, which incorporates special surveillance equipment, is at one side of the vestibule passageway; an equipment locker is on the opposite side. The streamlined profile of the fronts of these two areas is continued across the clamshell doors which move forward and then part as they move transversely to uncover a retracted diaphragm when the car is to be at an intermediate position in a train. All cars are fitted at both ends with Symington Wayne hook-type couplers which make mechanical, air and electrical connections automatically.

Trucks are a General Steel design incorporating air and coil springs. Acoustical insulation has been emphasized throughout the car to make them as quiet as possible. Carpeting has been extensively used from ceiling to floor in passenger sections for sound deadening and ease of maintenance. Other linings are plastic-faced materials.

The 76-passenger coach weighs about 165,000 pounds; the 60-passenger snack-coach weighs 168,000 pounds. Each parlor car will seat 34 persons and will weigh about 169,500 pounds. Passengers will be served at their parlor car seats from an aircraft-type galley. Coach passengers will either be in or adjacent to a car with a snack bar.

Indirect lighting over the deep luggage racks will be supplemented by individual reading lamps at seats. Heating will be all electric; each car will have a 12-ton air conditioning system with dual cooling units feeding the overhead duct installation. There will be individual exhausts at each seat.

Glass area in passenger windows has been substantially reduced from the accepted standard and all glass is tempered safety plate.

While each car will have vestibules at both ends, only those at the non-streamlined ends will have steps and traps. PRR is constructing high-level platforms at its Washington, Baltimore and Wilmington stations to permit the Corridor trains to make stops of minimum duration. All doors are of the sliding type controlled from a central location in the rapid transit manner. ■

AIRPORT
607

Fasten your seat belts!

When you fly from Cleveland next year, your flight will begin downtown, the moment you board Pullman-Standard's sleek new stainless steel transit cars. At 55 miles an hour, you'll arrive at Cleveland Hopkins Airport in just 22 minutes. It's another first for Cleveland's fast thinking transit experts, and we're happy to share it. But we'll be happy to share it with you, too. If you want a rapid answer to your mass transit problems, come fly with us.

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WORLD'S LARGEST RAIL CAR MAKER

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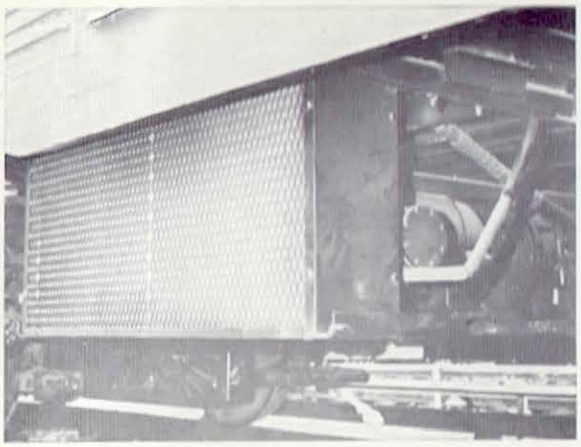


COMPRESSOR-CONDENSER unit is fitted to the underbody of the car near trucks. If tests are successful, the practice will be extended to more of the car fleet.

WHERE ARE THE FANS?—New Yorkers may ask. Continuous diffusers on car ceilings produce uniform air distribution, without icy spots to disturb riders.

Keep your cool in New York subways

NYCTA bought 10 air-conditioned cars; more may follow.

Into a long, hot summer on the New York City subways a little cool has come—ten cars of it. This week the New York City Transit Authority begins operating a complete IND line train of fully air-conditioned cars which could mark the beginning of a dramatic change in the character of summer subway riding on the huge system.

• **Cool new era.** "If test runs prove successful," says New York's Mayor John V. Lindsay, "the city will put a top priority on orders for several hundred more cars so that air-conditioned trains will be moving on nearly all subway lines in the next few years."

NYCTA has tried before. Between 1955 and 1962 there were attempts to cool a New York car with a series of separate units—initially four 1½-ton models and subsequently six of 2-ton size (one ton of air-conditioning capacity indicates removal of 12,000 British thermal units per hour). NYCTA concluded that with such installations it could not overcome the effects of peak-load crowds of 200 passengers per car, combined with high humidity and the frequent opening of doors in tunnels filled with warm air.

• **Greater cooling capacity.** The cars now going into service have nearly twice as much cooling capacity as their unsuccessful predecessors. The new installation has the capability for circulating and cooling all the air in the car in less than one minute. "But this is admittedly experimental; we are not absolutely certain of the outcome," comments an engineer of GSI-St. Louis Car, which built the 200 cars that included the ten which have been air-conditioned. He did explain that there is sufficient cooling in each car to take care of six average six-room houses.

Five cars are fitted with Safety Carrier installations which are rated at 18 tons; five have Trane systems which rate at 20 tons. Installations are essentially the same. A single compressor-condenser powered from the 600-volt third rail is installed under the car. A pair of evaporator-blower units are installed above the ceiling, one at each end of the carbody.

The familiar ceiling fans have disappeared, replaced with a smooth ceiling having slot-type air diffusers along the sides. Air is circulated through the insulated, split duct above this ceiling at a rate of over 5,000 cubic feet per minute.

• **Will it lure riders?** If the experience of two other U.S. transit operators is a precedent, NYCTA riders will find air-conditioned equipment attractive. All 253 cars in the New York—New Jersey service of Port Authority Trans-Hudson are air-conditioned. These include 206 built by GSI-St. Louis Car over the past three years (RA, Mar. 15, 1965, p. 26) and the remainder built by St. Louis in 1958 (RA, July 14, 1958, p. 12) for Hudson & Manhattan and the Pennsylvania which then operated the New York — Newark, N.J., service now run by PATH. Chicago Transit Authority operates 180 air-conditioned cars built by Pullman-Standard (RA, May 4, 1964, p. 26) in 1964.

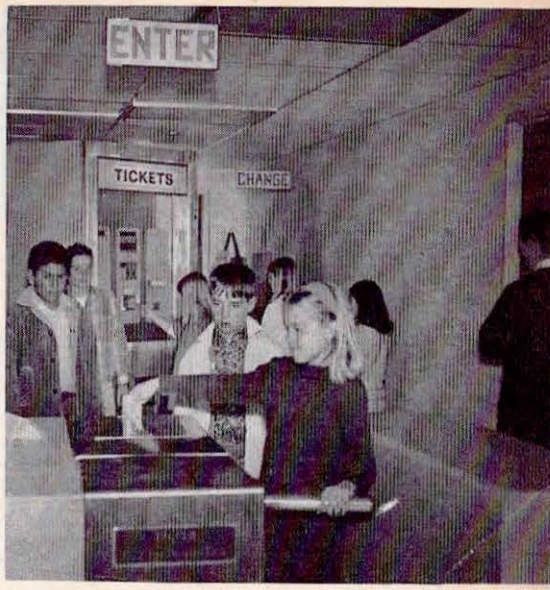
For the transit operator, air-conditioning does not come free. William H. Miller, PATH's superintendent of equipment, reports that there is a 12-man staff for cleaning, testing and repairing the heating, cooling and ventilating equipment on 253 cars—about one man-day per car per month. Miller emphasizes the importance of cleaning.

The under-car condenser must be blown clean with compressed air monthly. The twin evaporators in the car's ceiling are cleaned with a vacuum every thirty days, when the filters in the fresh-air and return-air ducts are either cleaned or replaced. The 1965 cars have permanent type filters which must be washed and oiled after each change. The 1967 cars have disposable filters which PATH is now appraising carefully.

There have been equipment refinements which have been found necessary as PATH experience increased. Most problems have been resolved successfully, says Miller. ■

ADS SYSTEM has had wide public exposure such as on Illinois Central and LIRR. Turnstiles of different designs, including clamshell arrangements (above) have been tried out.

GE COMMUTA-CODE SYSTEM differs from the others in that units are self-contained. Like the others, riders may purchase tickets from self-service vending machines on the spot (above).



FMC-CDC SYSTEM demonstration was the most recent. It relies on hardware from the former firm, logic functions from the latter. Ticket barriers are linked to a central computer.

BART gets ready for fall bidding on automatic fare collection

Over the past two years, there have been extensive public demonstrations of three different systems. Bay Area Transit officials will pick one late this year for installation in 1969.

When the Bay Area Rapid Transit system opens in 1969, one of its big features will be complete automation of fare collection. To get ready for this, BART officials are now circulating preliminary specifications among manufacturers, with a view to opening bidding this fall.

The BART contract, worth in the neighborhood of $7 million, has four interested bystanders hoping to make the winning bid: Advance Data Systems Division of Litton Industries (ADS); General Electric's Meter Department; and Food Machinery Corp. in a joint effort with Control Data Corp. (FMC-CDC).

According to engineers of Parsons-Brinckerhoff-Tudor-Bechtel, the joint-venture consultants to BART, preliminary specifications will be firmed up in the next two months, and a performance specification will be incorporated in the tender that is opened for bidding in mid-October. A decision on which bid gets the prize is expected by mid-December.

The idea itself is not unfamiliar by now. Experiments have been held on numerous systems throughout the world: London Transport has on a pilot basis converted several stations to automatic fare collection with the goal of compete conversion in the future; the Paris RATP is investigating the idea; the Rotterdam Metro, due to open next February, will have an automatic system. Two commuter railways in Japan already do.

The Milan and Montreal Metros have ticket-taking equipment that is a halfway-house to complete automation.

In this country, the LIRR had a year-long demonstration of an automatic system at two of its stations; the Illinois Central has installed a system for its commuter operation in Chicago. Several transit networks in the planning or building stage are expected to incorporate the development.

The BART bidding has special interest for two reasons. One is the sheer size of BART; a fare collection system would have to be installed at 33 stations along 75 miles of route. The other is that BART has been vaunted as the showcase of the world for major technological developments of all kinds in transit; the eyes of transit officials everywhere are therefore on what BART decides to do.

- **HUD helps out.** The three systems competing for the BART award have basic functional similarities, although they differ in hardware design. Under a HUD demonstration grant, all three have been tried out in public during the past two years.

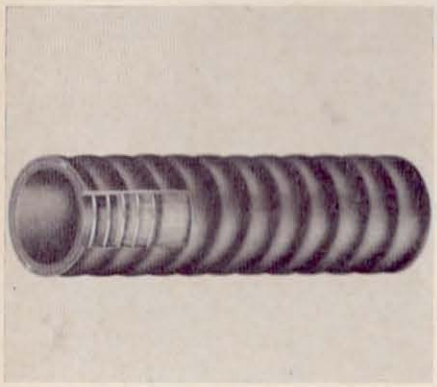
The ADS system is the one that has had the most public exposure of the three. It is the one installed in London, on the LIRR for the demonstration, and on the IC on a regular revenue basis.

The latter installation was marred at first by numerous "bugs" which were widely publicized in the mass media; it should be remembered that other public demonstrations of the same system were not marked to any great extent by such troubles, and the IC installation also appears to have been debugged.

In the ADS system, automatic ticket vending machines dispense magnetically coded tickets to riders. The rider in-

(Continued on page 32)

NEW PRODUCTS REPORT

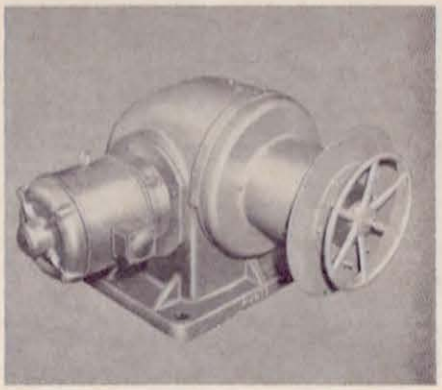


Hot-Air Blower Hose (RA-1)

Flexibility of the Gates 49SB hot-air blower hose for transferring dry bulk materials has been improved to withstand vibration, and its working pressures have been increased. The hose, the inside diameters of which range from 1 in. to 6 in., is said to withstand temperatures up to 500 deg F. It can also be used to transfer chemicals. On truck applications, the hose is generally permanently connected to the tractor. *The Gates Rubber Company.*

Warning Light (RA-2)

Three sealed-beam lamps rotating inside a flat-shaped dome feature the "Long Ranger," a rotating and flashing amber light designed for locomotive cab roofs. The light operates on 72 volts. It is direct-wired at installation to insure its continuous operation at all times the locomotive engine is running. Accidental turn-off is "positively" prevented. The light is a cooperative development of W. L. Nicks of the Houston Belt & Terminal Railway and the *Rig-A-Lite Co.*



Car Puller (RA-3)

The Model 16-H car puller has a starting rope pull of 15,600 lb and a running rope pull of 7,800 lb. It consists of a one-piece cast housing enclosing worm and pinion and helical gear mechanisms. A heavy-duty clutch disengages the unit for rope payout and engages when pulling. Manual rope tension is not required. The car puller is suitable also as a winch for lifting and hauling. It has a drum capacity of 400 ft of 3/4-in. wire rope. *Stephens-Adamson Mfg. Co.*

Door Locks (RA-4)

Continuous 1-in. High Yield steel tubing is used for the Model DV, HV (illustrated) and CS-1 Power Brace door locks for truck, trailer and container doors. The DV model has a 3/4-in. High-Yield inner tube for a length of 3 ft at lower end to give maximum strength at that point to meet piggyback demands. One unit of CS-1 model serves as a door lock and door stabilizing brace. The three models meet USASI MH5.1-1965 Specifications for Cargo Containers. *W. H. Miner.*

Anti-Pilferage System (RA-5)

A new electronic system provides immediate protection against unauthorized entry into freight cars as they arrive in terminals. The system has two basic components: a radio receiver in the terminal area connected to alarm devices, and a small unit containing a detector mechanism and a battery-powered transmitter to be attached to a door exterior. Transmitter is activated if door is opened or tampered with by unauthorized persons. Any number of transmitters may be used with one receiver. *Thug Chaser, Inc.*

RAILWAY AGE
THE TRANSPORTATION WEEKLY

30 Church Street, N.Y., N.Y. 10007 READERS' SERVICE (Att. George Johnson)

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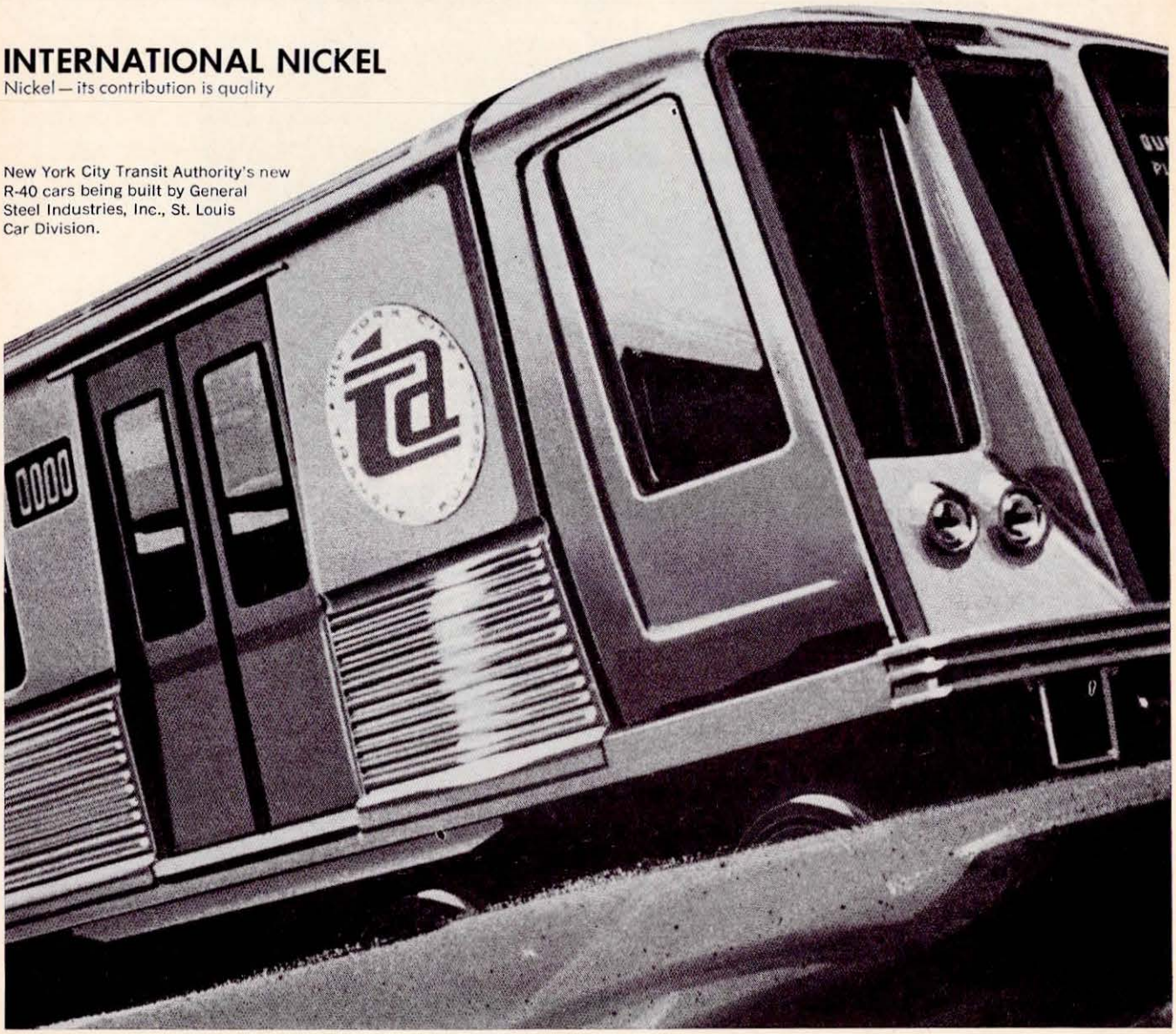
INTERNATIONAL NICKEL

Nickel — its contribution is quality

New York City Transit Authority's new R-40 cars being built by General Steel Industries, Inc., St. Louis Car Division.



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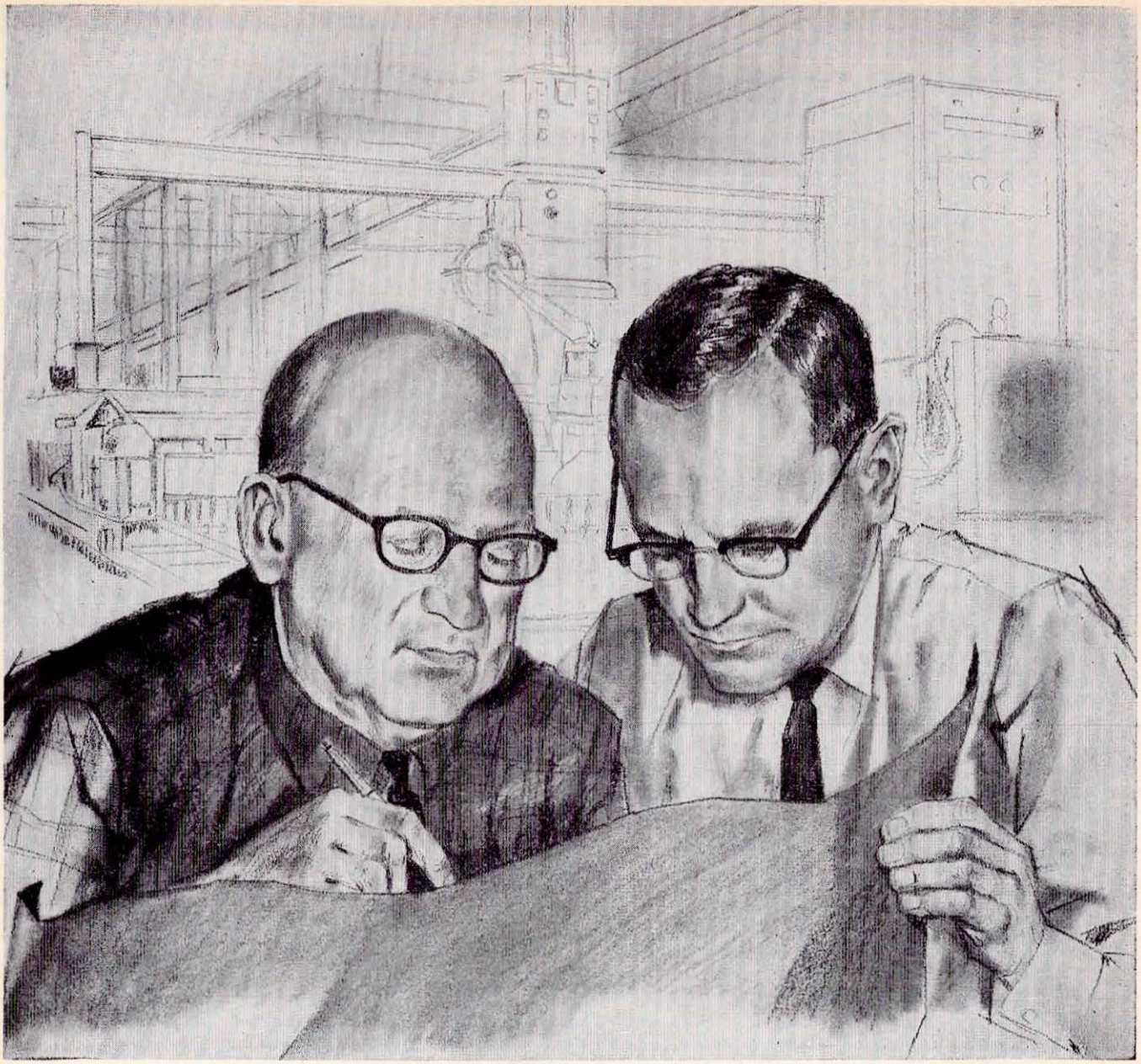
WILLIAM J. RONAN, CHAIRMAN
Metropolitan Transportation Authority
New York, N.Y.

"The MTA has been directed to develop a network of mass transportation facilities to serve not only the present needs but future growth of the world's largest urban region. This commitment to progress requires us to keep abreast of the very latest technological advances in the railroad industry and of enlightened policies and practices in railroading throughout the world.

"We look to Railway Age as an indispensable and invaluable source for keeping us up to date on the many exciting changes taking place in the field of railway transportation today."



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Our Bills and all the other "old-style" metal craftsmen at Berwick keep putting their know-how into the jobs you send them . . . jobs which require design excellence and experience to reduce the rejection rate, lower the price, and improve delivery time.

Bill Bankes and all our other men: many reasons for a first-rate job from Berwick.

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July 27, 1967

BURRO work power...

Model 40 Burro Locomotive Crane Ditcher with long digging radius to permit starting ditch ample distance from track. This Model 40 Burro not only digs ditch and loads both near and far ends of cars, but also hauls its own cars with its own power.

Burro Crane, with threader suspended from boom of the crane to guide the rail, shifting new welded rail from the shoulder to the center of track.

means MORE earning power

On the line, in the yards, or Stores Department—a Burro does the job fast, efficiently, and profitably. Fast travel speeds and heavy draw bar pull enable the Burro to go to the job in a hurry—and even haul its own cars with it. Once on the job, the Burro wastes no time getting the job done with hook, magnet, tongs, bucket or dragline.

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For modern railcars...

The jet-inspired Garrett-AiResearch air comfort system.

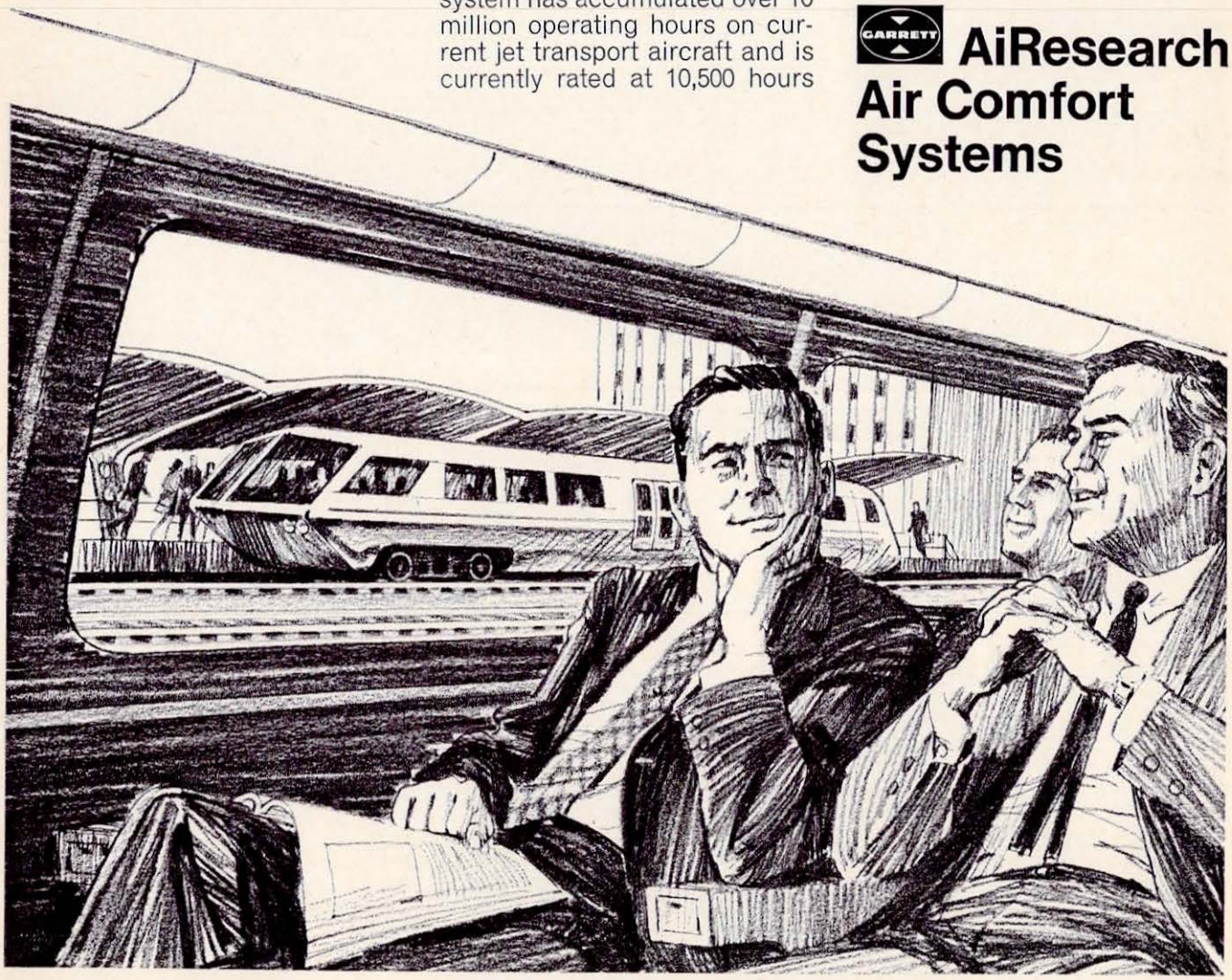
The Budd Company's new "Turboliner" RTC is advancing the technology of railcar design: it features lightweight, high performance Garrett gas turbines for propulsion, and a jet aircraft-inspired air comfort system.

This system is one-half the size, and one-fifth the weight of conventional railcar units. It incorporates such advanced design features as 400 cycle power—which further reduces electrical subsystem weight—yet it remains comparably priced with other systems in use today. It can be installed overhead or under the floor, and quick-change modular design makes servicing easy.

The AiResearch air comfort system for railcars is a direct outgrowth of our environmental systems flying on most of today's jetliners. This lightweight Freon system has accumulated over 10 million operating hours on current jet transport aircraft and is currently rated at 10,500 hours between overhauls. The high speed lightweight compressor is the heart of the entire system. It has a mean time between malfunction of over 70,000 hours.

AiResearch can custom-design a complete railcar air comfort system to your specific requirements. For complete details, write: AiResearch Manufacturing Division, 9851 Sepulveda Blvd., Los Angeles, California 90009.

GARRETT **AiResearch Air Comfort Systems**



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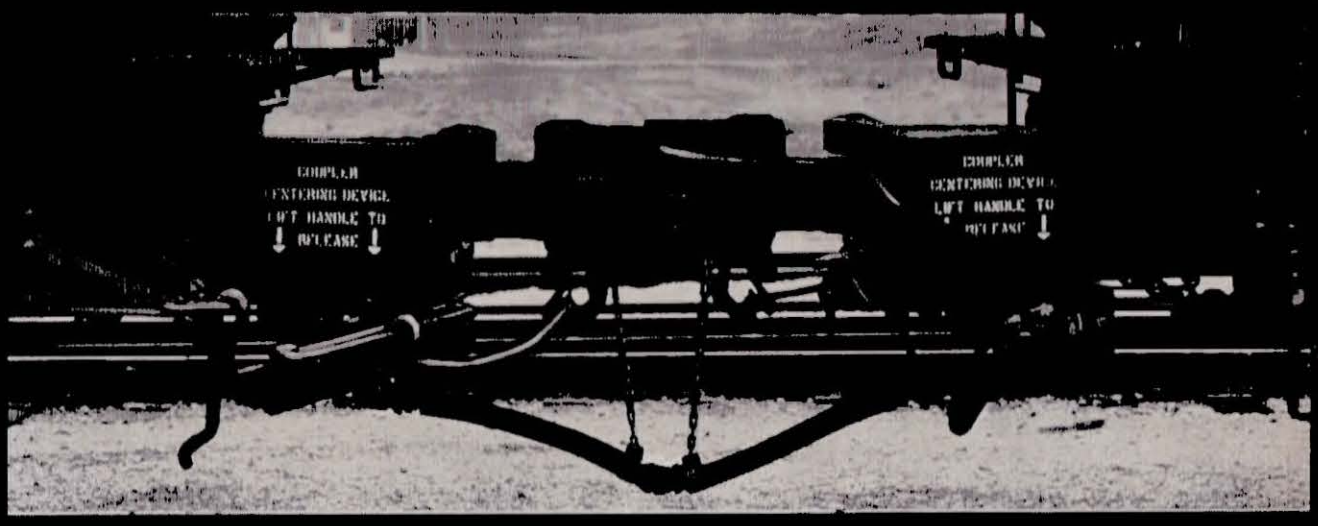
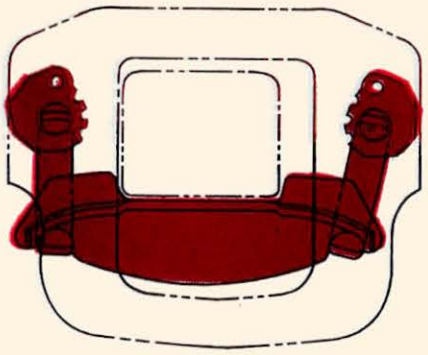


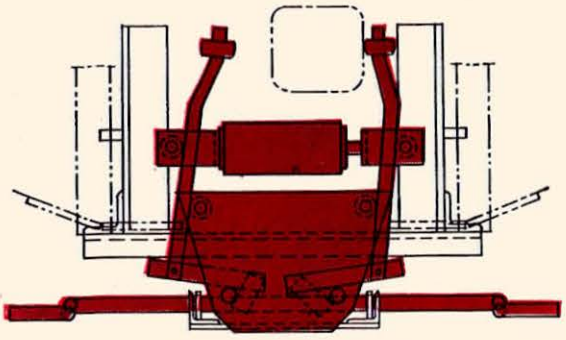
Reduce car damage with these Standard Coupler Centering Devices

By keeping a free coupler centered in relation to the end sill, they minimize the damage brought on by the passing of couplers.

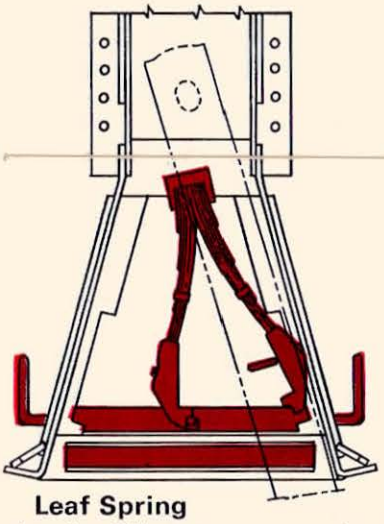
A Complete Family of Standard Centering Devices to Meet All Car Conditions



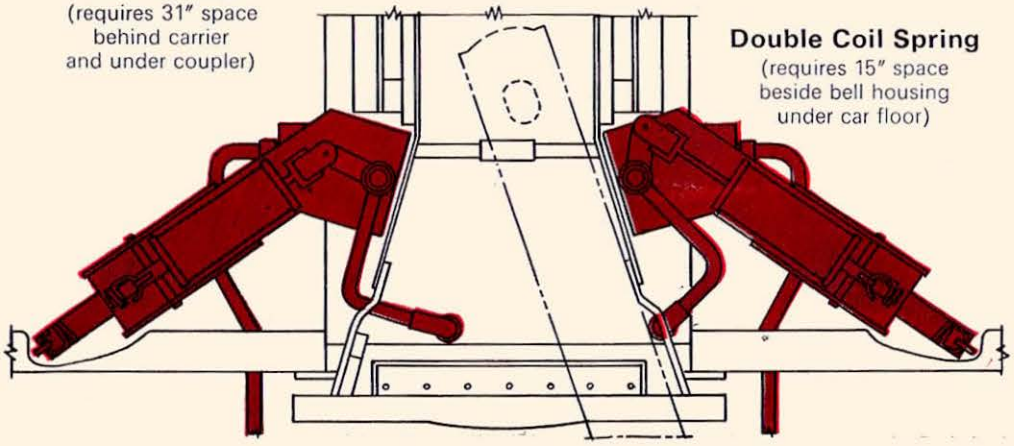
Swing Type
(includes carrier)



Single Coil Spring
(requires 6" space
behind carrier and under coupler)



Leaf Spring
(requires 31" space
behind carrier
and under coupler)



Double Coil Spring
(requires 15" space
beside bell housing
under car floor)

Today's longer freight cars, with their long-shank couplers and wide-opening strikers, have required new centering device designs to meet the many car conditions. These new designs afford the same protection from damage that the Standard Centering Device has provided for many years—protection that is even more important with today's wide-swing couplers.

With a Standard Coupler Centering Device, the risk of passing couplers is reduced to a minimum. The device keeps a free coupler centered in relation to the end sill. If the coupler is swung wide when disengaged from another, the device instantly returns it to center position.

When the coupler is coupled to another car, the centering device permits all movements essential to safe operation . . . sideways, and up and down.

In using a wide-swing coupler device, there will be occasions when coupler alignment requires that a free coupler be moved off center. If so, a pull on the handle releases the centering device. As the cars move, and the coupler returns to center position, the device automatically re-engages.

Standard Coupler Centering Devices are supplied in four to six components, together with all necessary hardware and simple instructions for installing.

The choice of designs will hinge upon your particular application. Your Standard representative will be glad to recommend the best choice for the job at hand—and to answer any questions you may have.

STANDARD RAILWAY EQUIPMENT
division of STANRAY CORPORATION
Hammond, Indiana • Chicago

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BART looks at fare collection

(Continued from page 23)

serts the ticket in a computer-controlled passenger gate, which scans the ticket, and releases the barrier through which the rider passes to his train.

The scanning process by computer is the key to the system. A magnetic oxide coating on the ticket contains coded information which the computer validates. When the rider inserts his ticket in the barrier, if the ticket is for a single trip, it is captured and kept; if it is a multiple-ride ticket, a single ride is subtracted from the total number for which the ticket is good, before the barrier is released and the passenger moves on. The whole process, either way, takes a fraction of a second.

ADS has experimented with several types of barriers, including straight turnstiles and clamshell affairs that enclose the rider during the moment when he passes through the gate.

• **22,500 simulated rides.** The FMC-CDC system calls on the resources of both firms in that the former supplies the physical hardware and the latter supplies the logic functions. The system was publicly demonstrated for 30 days this past spring at FMC laboratory facilities in Santa Clara, Cal. Over 22,500 "rides" were recorded by people from all walks of life invited to go through the ticket barriers.

The rider buys his ticket from an automatic self-service ticket vendor. The ticket vendor marks the purchase value both on a magnetic coating on one face, and with an "X" on a price grid on the reverse face.

As in the ADS system, the rider inserts his ticket in a slot in the barrier, the computer reads and validates the ticket, the barrier is released and the rider moves on. The main difference in concept is that the ADS system calls for a computer at each station to perform logic functions; the FMC-CDC concept calls for hooking up ticket barriers to a central computer.

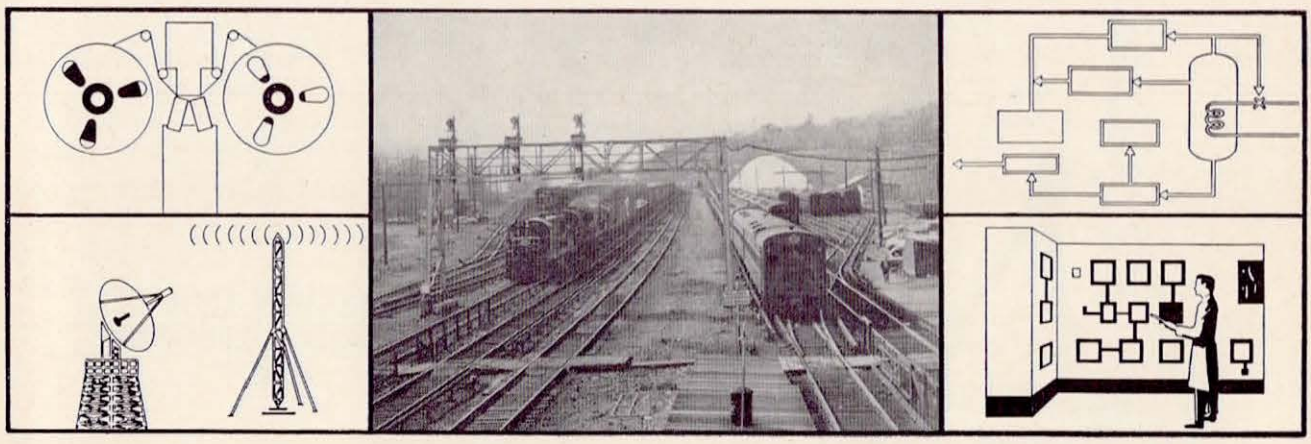
The General Electric "Commuta-Code" system was set up for public demonstration last year at its Meter Department plant in Somersworth, N.H. Over an extended period, all employees entering and exiting from the plant in the normal course of their work passed through ticket barriers, making use of GE trip tickets.

In this system, the ticket is of somewhat heavier material than the others and larger—more like a credit card. The rider buys either a single trip ticket or a commuter ticket available from an automatic self-service vending machine, or purchaseable by mail or over the counter.

• **Some extras.** As in the case of the other systems, the rider inserts his ticket in the barrier, where it is scanned, validated, and the barrier released in a split second. As an additional feature, the barrier can also take coins: If the rider inserts a quarter, which would be payment for a single ride, the barrier would also allow the rider through.

The GE system has another piece of equipment in the Addfare Machine, which takes care of situations where a rider has underpaid his ride to a particular station. The machine displays the amount the rider must add to the pre-paid amount shown on the ticket; the amount is added and the ticket is validated in the ordinary way when the rider passes through the barrier.

The GE system concept differs from the others mainly in that all pieces of equipment are self-contained; each ticket barrier has its own logic functions with no external connections to other system components. ■



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MARKET OUTLOOK

Carloadings

Loadings of revenue freight in the week ended July 29 totaled 548,838 cars, the Association of American Railroads announced on Aug. 3. This was an increase of 65,748 cars, or 13.6%, compared with the previous week; a decrease of 43,672 cars, or 7.4%, compared with the corresponding week last year; and a decrease of 42,661 cars, or 7.2%, compared with the equivalent 1965 week. Ton-miles generated by carloadings in the week ended July 29 are estimated at 13.9 billion, a decrease of 3.8% below the corresponding week of 1966, and 0.2% below the 1965 week.

REVENUE FREIGHT CARLOADINGS

For the week ended Saturday, July 29

District	1967	1966	1965
Eastern, including Allegheny and Pocahontas ..	215,949	230,307	240,814
Southern	108,536	114,608	106,130
Total Eastern and Southern Districts	324,485	344,915	346,944
Northwestern .	80,284	91,996	90,395
Central Western	106,060	116,268	113,843
Southwestern .	38,009	39,331	40,317
Total Western Districts	224,353	247,595	244,555
Total All Roads	548,838	592,510	591,499
Commodities:			
Grain and Grain Products	55,962	63,714	56,000
Livestock	1,126	1,223	1,246
Coal	113,969	117,567	115,281
Coke	6,047	8,423	8,563
Forest Products	41,561	41,105	39,416
Ore	49,892	55,319	56,929
Merchandise l.c.l.	4,326	6,179	8,649
Miscellaneous .	275,955	298,980	305,415
July 29	548,838	592,510	591,499
July 22	483,090	572,535	582,598
July 15	530,090	565,660	575,697
July 8	405,594	445,102	448,451
July 1	506,142	554,203	541,591
Cumulative total, 30 weeks ...	15,962,538	16,793,938	16,604,139
Estimated revenue ton-miles (billions) 30 weeks ...	413.3	521.4	392.3

PIGGYBACK CARLOADINGS. — U.S. piggyback loadings for the week ended July 22 totaled 20,777 cars, carrying 32,207 trailers, compared with 22,130 cars, carrying 35,967 trailers, in the corresponding 1966 week. Loadings for 1967 up to July 22 totaled 647,950 cars, carrying 1,063,679 trailers, compared with 625,668 cars, carrying 1,032,035 trailers, in the corresponding period of 1966.

IN CANADA—Carloadings for the seven-day period ended July 7 totaled 69,421 cars, compared with 110,764 for the previous nine-day period, according to the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada		
July 7, 1967.....	69,421	19,844
July 7, 1966.....	63,090	20,963
Cumulative Totals		
July 7, 1967.....	1,961,085	666,953
July 7, 1966.....	2,086,370	686,895

FREIGHT TRAIN CARS

► *Detroit, Toledo & Ironton.*—Is leasing 75 cars from Evans Products' United States Railway Equipment Co. subsidiary. Fifty are 4,427-cu-ft-capacity covered hopper cars which DT&I is taking on a "split-lease" arrangement. The remainder, being acquired on a regular lease basis, are 100-ton Evans Coil Cars with lift-off covers.

► *Katy.*—Directors approved lease of 1,200 new freight cars in 1968 to complete a 5,000-car procurement program started in 1965 and aimed at raising Katy's fleet to more than 12,000. Cost and types of the cars will be determined after financing arrangements are set. The 3,800 cars previously leased were valued at $50 million.

► *Orders increase.*—Orders were placed for 7,799 new freight cars in June, compared with 4,177 in May and 5,865 in June 1966. Contract car builders got 6,787 of the cars ordered in June, and railroad car shops 1,012. In addition, orders were placed in June for 3,650 rebuilt cars, compared with 3,500 in May and 1,225 in June 1966. Deliveries of new freight cars totaled 8,458 in June, compared with 6,344 in the previous month and 7,325 in June 1966. June deliveries of rebuilt cars (those constructed at a cost of more than 50% of comparable new-car cost) totaled 1,706. Backlog of new cars on order and undelivered on July 1 was 30,730, compared with 32,493 on June 1 and 59,923 on July 1, 1966. Number of cars scheduled for rebuilding on July 1 totaled 12,563, compared with 10,619 on June 1 and 9,881 on July 1, 1966.

PASSENGER TRAIN CARS

► *Metropolitan Commuter Transportation Authority.*—Disclosed that Budd is the apparent low bidder on the supply of 250 high-speed electric cars for the Long Island. MCTA announced the bids on Aug. 3, emphasizing that the figures still required evaluation and weighting. There were three classes of bids—(1) stainless steel, (2) aluminum and (3) low-alloy high tensile steel. For stainless steel cars, Budd bid $49,950,000, or $399,600 per pair of cars; weight, 180,000 pounds per pair. For aluminum cars, Budd bid $50,575,000, or $404,600 per pair of cars; weight, 176,800 pounds per pair. For low-alloy high tensile steel cars, Budd bid $49,450,000, or $395,600 per pair of cars; weight, 187,000 pounds per pair. For stainless steel cars, Pullman-Standard bid $60,000,000, or $480,000 per pair of cars; weight, 186,600 pounds. For aluminum cars, Pullman-Standard bid $59,062,500, or $472,500 per pair of cars; weight, 170,000 pounds per pair. Pullman-Standard did not bid on low-alloy high tensile steel. For stainless steel cars, St. Louis Car bid $77,500,000, or $620,000 per pair of cars; weight, 181,200 pounds per pair. For aluminum cars, St. Louis Car bid $74,562,500, or $596,500 per pair of cars; weight, 172,400 pounds per pair. For low-alloy high tensile steel cars, St. Louis Car bid $73,675,$00, or $589,400 per pair of cars; weight, 182,000 pounds per pair.

► *Southern Pacific.*—Is asking bids on the supply of 15 new air-conditioned, double-deck gallery commuter cars to add to its Peninsula (San Francisco) fleet.

YOU OUGHT TO KNOW

First NP container-import: Northern Pacific's first import shipment of containerized merchandise consisted of 205 tons of Japanese toys and gift products for Playhouse Co. of Minneapolis. Valued at $500,000, the merchandise was delivered in four 20-foot containers loaded in Japan and 18 NP piggyback trailers loaded from an American Mail Line ship at Seattle. NP opened Japanese offices early this year.

Youngstown billings advance: Higher billings in June resulting from restoration of the investment tax credit continued in July, reports Arthur J. Doyle, Youngstown Steel Door Co. president. However, first-half net was $1,604,975, or $1.15 a share, compared with a 1966 figure of $1,856,906, or $1.36 a share. First-half sales were $21,844,609, compared with $23,158,358 in 1966.

Union Tank earnings rise: Reversing a national trend, Union Tank Car Co. reported record earnings of $8,466,539 for the first half of 1967 —up 6% from the corresponding 1966 period. Said President J. W. Van Gorkom: "The company's ability to attain new records in earnings, during a period in which the national economy was generally soft, demonstrates again the inherent stability of our service-leasing business." He noted that Union Tank invested more than $25 million in new tank cars during this year's first six months.

HUD makes top appointments: Named to direct the urban transportation research program was H. W. Merritt, who comes from the Office of the Chief of Naval Development. Col. J. L. Christopulos (USAF Ret.) was named transportation representative, Division of Project Development, Urban Transportation Administration. Col. Christopulos—formerly Deputy Chief, Resources and Planning Division, SAC Headquarters—will be working with local public agencies.

IC hikes GM&O holdings: Illinois Central has increased its holdings of Gulf, Mobile & Ohio stock to 180,000 shares, or about 18% of total voting shares, as compared with 93,000 shares, or 9.2% earlier this year. The 180,000 shares have been placed in trust to avoid allegations that IC is illegally gaining control of GM&O.

TTX gets another prototype: Bethlehem Steel has delivered to Trailer Train its version of an all-purpose trailer-container flat car. Three other builders delivered their own prototype earlier. Bethlehem's 89-ft car, numbered TTX-102, will first be tested by the Southern, then will go to other carriers for additional in-service testing. The car is equipped with two General American tractor-operated, low-profile trailer hitches. It is capable of handling two highway trailers, or two 40-ft or four 20-ft containers, or a combination of one highway trailer with one 40-ft or one or two 20-ft containers.

Pevler will stay on: Norfolk & Western President Herman H. Pevler will be 65 next April 20—but N&W's directors don't want him to retire then. In a resolution providing that Pevler's retirement be deferred "to a date which shall be fixed hereafter," the board said: "Particularly in view of the company's involvement in pending merger matters, it is deemed in the best interests of the company to provide for Mr. Pevler's leadership past the normal retirement age."

'We want passenger trains:' Chicago lawyer Anthony Haswell announced formation of a National Association of Railroad Passengers with headquarters in Chicago. The organization is designed to fight erosion of passenger service.

Truck tonnage: Intercity truck tonnage in the week ended July 22 was 3.4% above that of the previous week but 4.7% below volume in the corresponding week of 1966, according to American Trucking Associations.

Current statistics

Net Income	
3 mos., 1967	$120,000,000
3 mos., 1966	172,000,000
Carloadings, revenue freight	
30 wks., 1967	15,962,538
30 wks., 1966	16,793,938
Freight cars on order	
July 1, 1967	30,730
July 1, 1966	59,923
Freight cars delivered	
5 mos., 1967	39,129
5 mos., 1966	36,743
Serviceable cars	
June 1, 1967	1,419,210
June 1, 1066	1,412,244

AS THE EDITOR SEES IT...

SELF-FEEDING TRAINS?—Just as small airliners feed traffic to big airliners, it's going to take a passel of more-or-less ordinary trains to feed the sleek new trains that will be racing between New York and Washington come next Oct. 29. Why not, suggests RA Publisher Bob Lewis (himself a former railroad passenger man), let the Pennsy's new super-expresses feed themselves?

WHO LIVES AT PENN STATION?—"Success in attracting medium range traffic (100-300 miles) to common carriers, and especially to ground transportation, is partly dependent on the convenience of assembly and distribution points," memos Bob. "The Department of Transportation has already acknowledged this as evidenced by their proposal to establish a North Jersey station near the Garden State Parkway, and one adjacent to the crossing of a peripheral highway just north of Washington for trains on the Northeast Corridor project. (Nobody lives at Penn Station; not many live near it. It's only as assembly point. Nobody goes to Union Station in Washington. They go through it to get somewhere in Washington, or to nearby suburbs.)

"There is absolutely complete compatibility between the electrifications on the Pennsylvania and the New Haven. Both are 11,000 v. A.C., with overhead collection. Equipment of one road can run on the other side with complete interchangeability.

"The foregoing statements relate. There is a great opportunity to expand the 'collection' facility of the Northeast Corridor experiment, at the New York end, with **no,** repeat, **no,** capital investment. At least one corridor express—preferably an early morning southbound and late afternoon northbound, could originate at New Haven, with stops at Bridgeport and Stamford. The latter stop would serve all the Connecticut and Westchester suburban towns though automobile access or connecting suburban trains. The temptation for Connecticut and Westchester dwellers to drive across the Throggs Neck or Whitestone bridges to LaGuardia or Kennedy for the shuttles would be greatly reduced. Breakfast service on the southbound train would make an early departure acceptable, and arrival in **downtown** Washington would allow for a full business day.

"Normal existing minimum running times on the New Haven sector would be fully acceptable for this extended through train feeder service."

A STEP FURTHER—Why not also let some of those big airliners feed the new trains? That's the way the Swiss do it. Arriving in Zurich the other day, just about the first thing I saw was the complete passenger timetable of Swiss Railways plastered on a wall in the airport terminal.

There's been some talk that part of the Pennsy's promotion of the Northeast Corridor service may take the form of posters in air-terminals. Three cheers for the author of that idea. After all, the airlines advertise in trains and along railroad rights of way. Why not a little tit for tat?—**L.S.M.**

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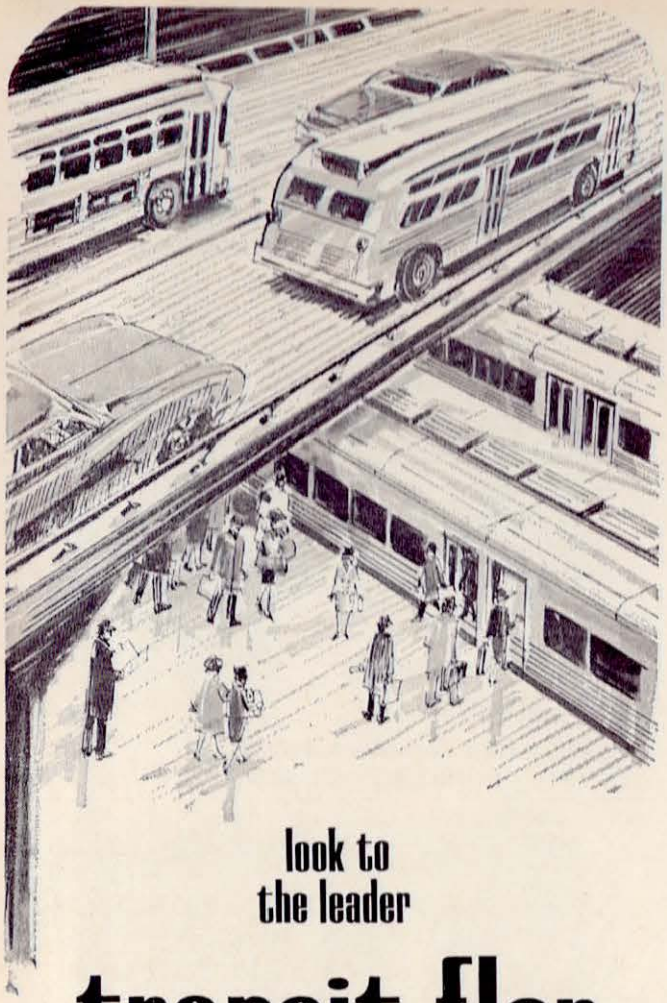

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WATCHING WASHINGTON

NEITHER RAIN NOR SNOW nor gloom of night reputedly has much effect on keeping the Post Office Department from making its appointed rounds. But consistently late mail trains and generally poor railroad service is something else again, according to an assistant postmaster general: "Not only are passenger trains often poorly scheduled for mail service requirements, but we find also that their performance of published schedules is not good. In a recent typical period, the week ended June 30, 1967, our national mail train operation report shows on-time performance (that is, no more than 15 minutes late) of only 70%. That is a national average, and some important mail trains fell even below that."

THE EXECUTIVE MAILMAN dumping his bag of complaints before a Senate subcommittee in Washington last week was William J. Hartigan of the P. O. Department's Bureau of Transportation and International Services. He aired his views at a hearing on Senate Concurrent Resolution 25, Section 2 of which would require the Post Office to continue all existing arrangements for rail transportation of mail "pending the outcome of a study of the service."

Hartigan made it clear that in opposing Section 2 of the resolution the Department was not out to derail all mail service—although he pointed out that even if the railroads did lose all of their Railway Post Offices, it would only dent their income by six tenths of 1%. "We are asking," he said, "only that the Department not be required to continue hauling mail on certain trains when we feel such action is inimical to the best interests of good mail service."

The Post Office began delivering its problems to the railroads' doorstep in late 1963, said Hartigan, when a series of meetings was begun with top operating officers of major mail-carrying railroads. And to show good faith, he added, the Department even suspended penalties against railroads except in extreme cases of bad service.

"The meetings with railroad officials are still continuing," he told the subcommittee. "Unfortunately, so are the late train operations."

ALL WASN'T NEGATIVE in Hartigan's testimony. "In many cases," he emphasized, "we find the railroads can do an excellent job of transportation of bulk mail. They have cooperated with us in arrangements for containerization, plant loading, consolidated movements and mileage equalization assessments." He said many new projects are being discussed with the railroads.

The railroads' position is that rail passenger service is being jeopardized by the continuing stamping out of rail mail service, and that the Post Office should shoulder a good share of the blame for the reduction in the number of mail-carrying passenger trains—from 10,000 in 1930 to about 850 today, a cut of more than 90%. The least the Post Office Department can do now, say many observers, is to call a moratorium on further curtailment of mail rail service until a study of the problem can be made.

(Walter Taft is on vacation. In his absence, this column is being written by other members of the staff.)

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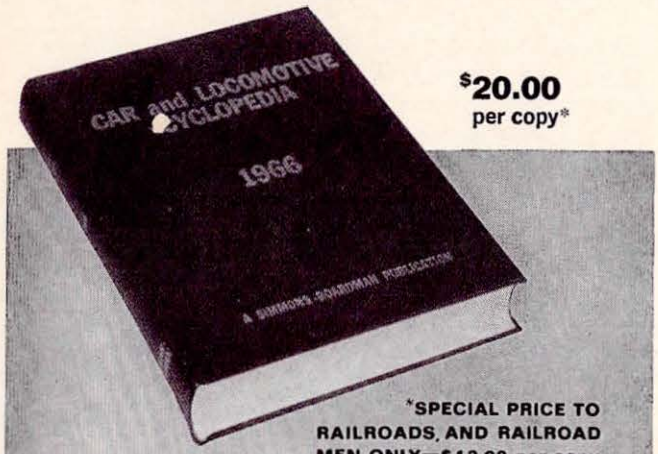

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VIEWPOINT

Compulsory arbitration?

In the aftermath, everybody's an expert. After the fact, everybody has a better idea. When crisis has passed, when the showdown's over, everybody has new thoughts, or second thoughts. So it is with the question of strikes in the transportation industry, specifically on the railroads.

In the aftermath of the walkout by shopcraft employees, readers of the daily and weekly press have been treated to opinion that goes from here to there and back. On the one hand are those who would immediately ban all strikes in this industry and in others so deeply involved with both the domestic public welfare and with the national security. On the other hand are those who argue that the right to strike is a civil-right of the wage-earner, and that things have not gotten so bad that permanent preventive action is necessary.

The arguments for the right to strike are persuasive. Railroad employees, among the first to organize, have won gains by striking that they quite possibly could have won in no other way. Railroad employees, in many cases in those early days, were up against the kind of management that couldn't be made to listen, except by show of force. Railroad employees today, as always, have as much right as the employees of any industry to decent wages and decent working conditions.

But they don't have the right to destruction, and that's what a transportation strike, or even the threat of one, involves in our present society.

Some say "no" . . .

Some people don't think this is true. They look at the figures, and they see that railroads do less than half of the nation's intercity freight business. Perhaps they decide that no industry with that share of the market can really be so vital. Some people also look at the record in other disputes in "vital" industries—in steel, or automobiles, or rubber, or copper, for example. They find that work-stoppages are permitted. Some people, finally, oppose a toughening-up of the "model" Railway Labor Act on grounds that the parties would take an imposed settlement every time and thus never in real bargaining (or that compulsion would breed all sorts of new controls).

First of all, railroad transportation is vital. (So, for that matter, is highway transportation, and the truckers haul only about 23% of the nation's commerce, as compared to 43% for the railroads.)

Secondly, harmful as strikes may be in other basic industries, hardly any other kind of strike matches a transportation strike for its broad paralysis-potential. After all, if you can't move it, why make it?

As for the third point—that nobody would bargain if an imposed settlement were certain—critics of a new-look Railway Labor Act may have a point. But there's a suspicion that their point would be valid only for the short-haul—only for as long as it took for the bargainers to realize that being the master of one's fate really is to be preferred.

Nobody is in favor of involuntary servitude. Nobody is seriously in favor of an abdication of responsibility by management and union negotiators. Nobody wants more governmental controls to be applied. Nobody, however, can afford to be committed to the status quo, if there's a better alternative.

. . . but history says "yes"

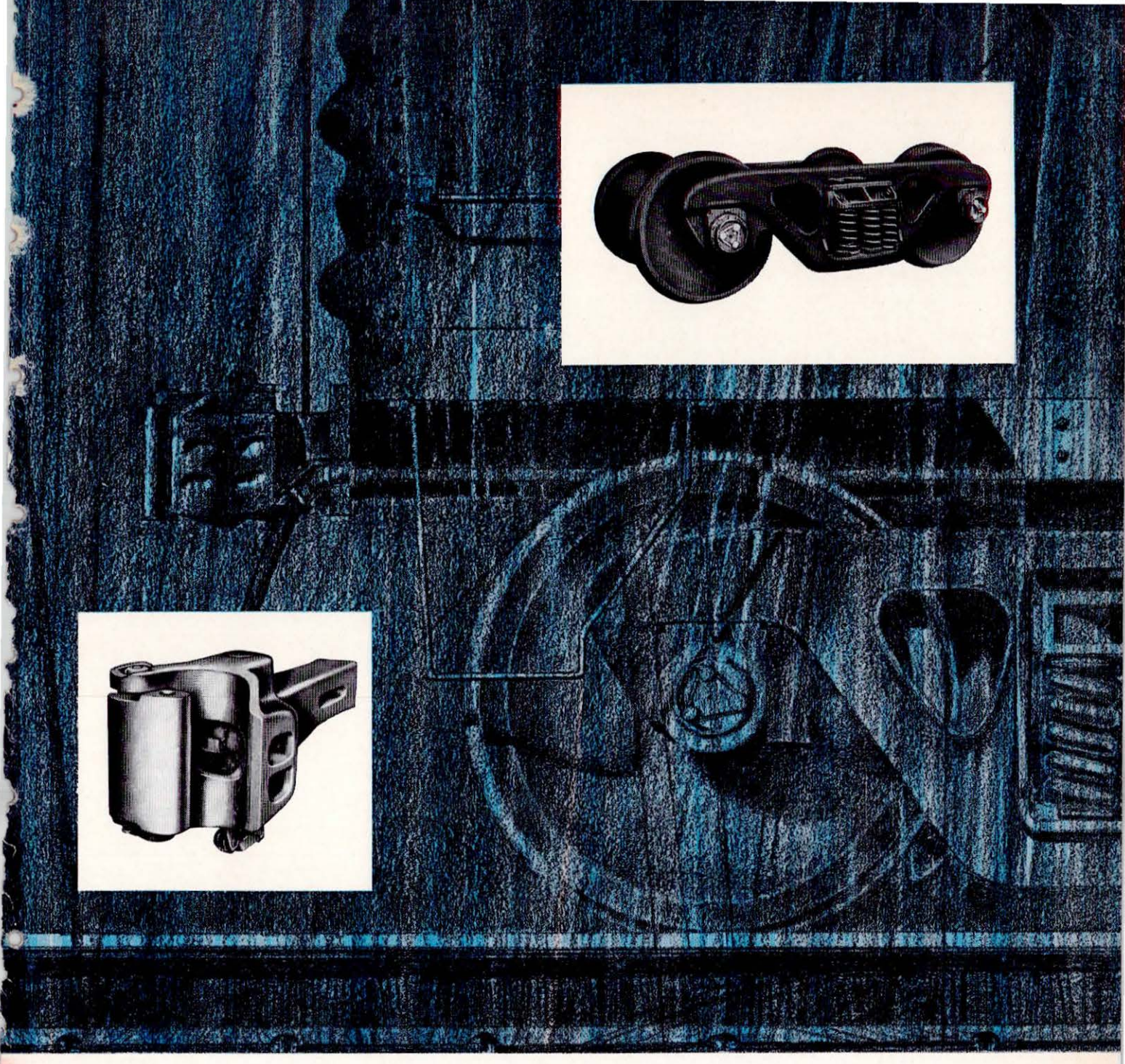
It would appear that two major factors must be recognized: (1) Rail transportation, as a vital element in the economy, the national welfare and the national defense, cannot be interrupted; and (2) within this context, means must be found to insure both the right of management to run its enterprise and the right of the employees to improve their status in life.

Good men on both sides, in management and among the brotherhoods, wish it were always possible to reach free-negotiated settlements. Good men on both sides are handicapped, however, because the record of the past few years shows that this is not always going to be the case.

Crisis-by-crisis handling is no real answer. It courts disaster, as the shopcraft case proved. Compulsory arbitration, by any name, is alien to management-union relationships in many ways. But in one form or another, it may offer a means to keep a vital industry running while its people redevelop collective bargaining.

The objective of bargaining, after all, is agreement—though this is sometimes easy to overlook. Nobody can say for sure what would happen if finality—an imposed settlement—were guaranteed. But there's a strong suspicion that finality might not be applied too many times.

And if it all came down to finality-in-argument, as everything must at some point, it could come to this: The very fact that there is a master could make a master unnecessary.



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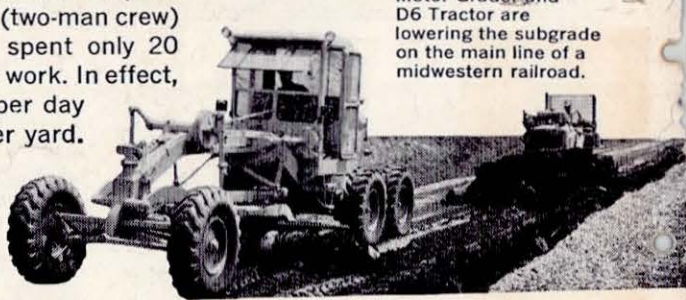
Recently, a railroad studied a work train (five-man crew) and a locomotive crane (two-man crew) doing common excavation. They spent only 20 percent of their time in productive work. In effect, the railroad was spending $250 per day to move 200 cu. yd.—or $1.25 per yard.

By contrast, a midwestern railroad uses a typical Cat-built spread (two D6B Tractors with bulldozers, two No. 60 Scrapers, a 977H track-type Loader and a No. 12E Motor Grader) to do similar work.

Hourly owning and operating costs for the spread, estimated by standard industry methods, are $37.93. Averaging 800 yards in a 6¼-hour workday, the cost per yard is 45¢, including the No. 12 for ditching and sloping and the 977 for cleanup.

Economies in operation like these are worth investigating—with your Caterpillar Dealer.



This Cat No. 112F Motor Grader and D6 Tractor are lowering the subgrade on the main line of a midwestern railroad.

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